NEW EQUIPMENT DIGEST

A Penton Publication

March, 1960

Volume 25 — Number 3

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CHECK AND PASS ALONG

✓	NAME	See No.

Use Inquiry Slips—Pages 16 and 88

EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

CHECK VALVES
for 3000-psi hydraulic service

Two hydraulic check valve models control up to 3000-psi operating pressure. In-line mounting type has internal pipe thread connecting port in one end and Triple-lok machining on the other end for JIC flared tube connection. Flow rates range from 3 to 50 gpm. • **Parker-Hannifin Corp.**, Parker Hydraulics Div., 17325 Euclid Ave., Cleveland 12, Ohio.

▲ For more details circle NED-1 C on enclosed inquiry slip ▲

ROTARY LIMIT SWITCHES
5:1 to 1750:1 gear ratios

Gear ratios ranging from 5:1 to 1750:1 are available in line of rotary limit switches for heavy duty industrial application. Held in explosion-proof cast aluminum NEMA 7 enclosures, units have single-pole, double-throw Micro Switches for reversibility of control circuits and independent cam settings. Switches are rated 125, 250, and 460 v, 15-amp ac; and 250-v, 1/4-amp dc. Impregnated powder metal bearings afford lifetime lubrication. • **Gemco Electric Co.**, 25685 W. Eight Mile Rd., Detroit 40, Mich.

▲ For more details circle NED-2 C on enclosed inquiry slip ▲

DUAL RANGE MANOMETER
used as vertical U-tube or inclined

Pressure or differentials from 0 to 16 in. of water are measured by the No. 1226 dual range manometer when it is used as a U-tube instrument. Minor scale divisions are 0.2 in. As an inclined gage, it reads from 0.2 in. to 0 to 2.60 in. of water with minor scale divisions of 0.2 in. Zero is easily set on the inclined scale without using a spirit level. Two flat magnetic mounting clips hold the lightweight, shatterproof manometer to any steel surface. Plastic carrying plugs slip over the tube ends to prevent loss. U-tube is heavy butyrate and connecting tube is clear flexible Tygon. • **F. W. Dwyer Mfg. Co.**, Dept. ND-5, Box 373, Michigan City, Ind.

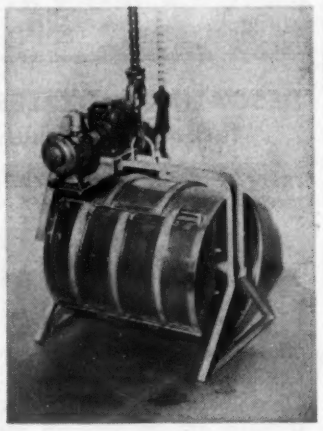
▲ For more details circle NED-3 C on enclosed inquiry slip ▲

CHAIN NOSE PLIERS
4, 4½, and 5-in. sizes offered

Thinnest possible nose construction is designed into these midget chain nose pliers for work on subminiature electronic subassemblies. They are made in 4, 4½, and 5-in. sizes for use in confined working space. • **Kelsey-Hayes Co.**, Utica Drop Forge & Tool Div., 2500 Whitesboro St., Utica 4, N. Y.

▲ For more details circle NED-4 C on enclosed inquiry slip ▲

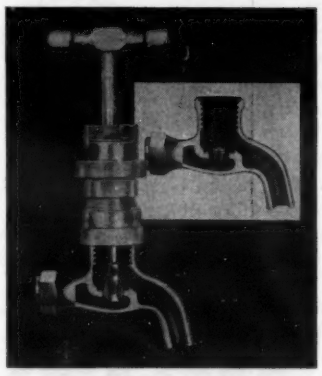
PORTABLE POWER TUMBLER
for finishing, cleaning metal parts



Improved portable rotating power tumbler for metal parts cleaning consists of a rotating drum which is air-motor driven at speeds from 2 to 12 rpm. Parts are dropped into drum through large hinged door, secured by two spring loaded locks. Tumbler is made in 11, 15, and 18-in. drum diameters; is adapted for hook lifting; and is constructed to withstand immersion in high or low temperature solutions. • **Dayton Rogers Mfg. Co.**, 2824 13th Ave. S., Minneapolis 7, Minn.

▲ For more details circle NED-5 C on enclosed inquiry slip ▲

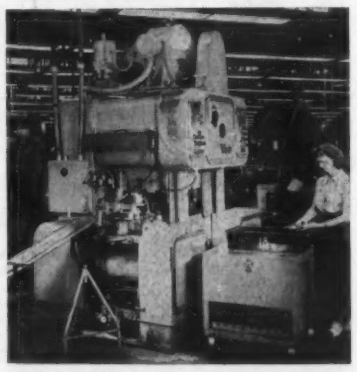
FAUCET REPAIR TOOL
taps worn fittings for new seats



Faucets and small valves with worn or leaking nonremovable seats can be tapped with this handy tool for installation of full-saddle removable seats which reportedly outlast the fitting. The tool steel taps are easy to use, and they fit a Sexauer faucet seat reforming tool which attaches to any style or type of fixture. Taps are available in five sizes to fit the five sizes of Sexauer removable seats which serve the needs of practically all faucets and small valves. • **J. A. Sexauer Mfg. Co.**, 2503-05 Third Ave., New York 51, N. Y.

▲ For more details circle NED-6 C on enclosed inquiry slip ▲

BLANKING PRESS
"flying" type has no gears



Both dies of this high-speed, gearless, flying-type blanking press are in constant motion, as is the metal stock. Upper die travels in a vertical circle; the lower oscillates through a vertical arc that harmonizes with the circle. Both maintain perfect lateral and parallel relationship. Three separated crankshafts which drive the rotating upper die frame are joined by solid connecting rods. This cost saving design reduces noise and backlash. Production runs of 200,000 to 500,000 pieces between die grinds on silicon steel stock are normal. • **Wean Equipment Corp.**, 22800 Lakeland Blvd., Cleveland 17, Ohio.

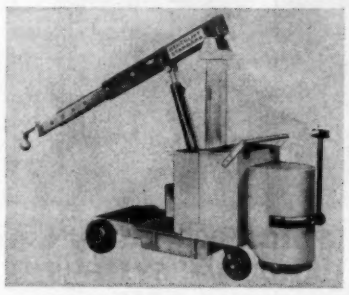
▲ For more details circle NED-7 C on enclosed inquiry slip ▲

ANCHORING CEMENT
rapid setting, self-leveling type

Minimum of ½ in. of poured Groutite mortar is required to anchor machines, railings, fixtures, overhead equipment, beams in walls, lathes, punch presses, and drills. Poured around bolts, material works into concrete pores, sets rapidly with controlled expansion to make bolt inseparable from concrete. It is odorless, vibration resistant, and self-finishing. • **Flexrock Co.**, 3603 Filbert St., Philadelphia 1, Pa.

▲ For more details circle NED-8 C on enclosed inquiry slip ▲

MOBILE FLOOR CRANE
adjustable boom lifts 5000 lb



Adjustable boom with hook enables this counterbalanced Herculift Standard mobile floor crane to reach 6 ft beyond front of the unit. It moves in four directions and can lift and position loads up to 5000 lb. Power boom can be lowered to 1½ ft and raised to 9 ft. This multidirectional mobile floor crane is manually or mechanically driven by a compact Dyna-Drive power unit. • **Colson Corp.**, 7 S. Dearborn St., Chicago, Ill.

▲ For more details circle NED-9 C on enclosed inquiry slip ▲

MACHINE MOUNT
for use with leveling screws

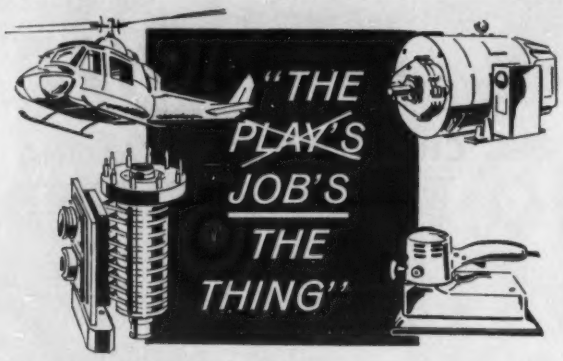
Level - Rite Model UL machine mount, for use under machines with leveling screws built into the feet or at load bearing points, combines Unisorb vibration control pads with a cast steel base plate. Recessed center accepts the external leveling screws. Mount is not attached to floor, enabling the machine to be moved whenever required. Sizes from 4⅝ to 10⅝ in. square have a maximum loading up to 7500 lb per unit. Transmitted vibration is reduced up to 85 per cent. • **Felters Co.**, Unisorb Div., 210 South St., Boston 11, Mass.

▲ For more details circle NED-10 C on enclosed inquiry slip ▲

SMALL HOLE HONING TOOLS
for 0.1 to 0.118-in. diameter bores

Available from stock, honing mandrels and stones are sized in 0.002-in. increments for 0.1 to 0.118-in. bores. They are supplied in short hole K Series and long hole BL Series for use in standard honing machines. • **Sunnen Products Co.**, Dept. E-30, 7910 Manchester Ave., St. Louis 17, Mo.

▲ For more details circle NED-11 C on enclosed inquiry slip ▲



That's what counts! Drawing upon literally hundreds of Superior brush grades and contacts, our responsibility is to fit your job *exactly*, whether on original equipment or in maintenance. The Superior representative will make sure that you get the very utmost in performance and long life. Forty years' experience goes into his recommendation and ours.

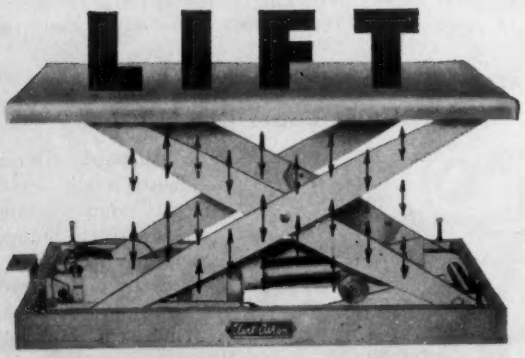
Ask for "Get the Most Out of Your Carbon Brushes"

SUPERIOR CARBON PRODUCTS, INC.
9115 George Avenue, Cleveland 5, Ohio

Since 1919 **Superior** CARBON BRUSHES

▲ For more details circle NED-12 C on enclosed inquiry slip ▲

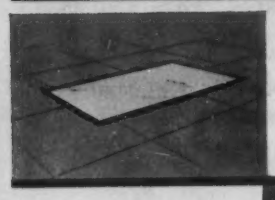
EASY WAY TO GET A LIFT



FOR LOADS UP TO 6000 LBS.—IN MATERIALS HANDLING SYSTEMS OR FOR CONVENIENT PORTABLE USE

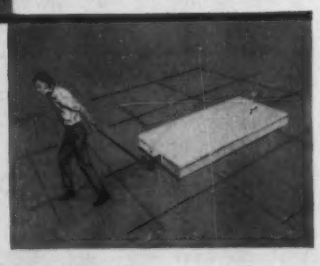
Standard sizes afford a wide selection of heights that readily adapt them to changing requirements—from floor level to a height of 48" and will lift up to 6000 lbs. depending on the unit. Control is fast and sure for any height positioning and with electronic accessories automatic positioning is available. Special cradle tops are available for handling paper rolls and other cylindrical materials.

Clark-Aiken STANDARD LIFT TABLES



FLOOR LEVEL INSTALLATIONS WITH SAFETY TOE GUARD

Tables may be flush floor mounted with disappearing toe guards for safe operation.



EASY TO MOVE FOR PORTABLE USE

Portable unit is wheel mounted; makes easy mobility around the shop for your requirements.

Send today for informative bulletin. Tell us your requirements and we will recommend table size.

THE Clark-Aiken COMPANY
105 HART ST. LEE, MASSACHUSETTS

Canadian Representative: Gordon W. Keates
133 Flora Drive, Scarborough, Ontario

▲ For more details circle NED-13 C on enclosed inquiry slip ▲

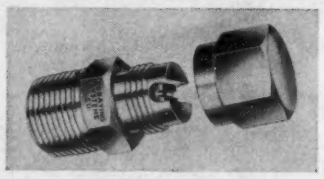
"Tooling for Productivity" Is Theme of 1960 Tool Show

Best known as "The Tool Show," the 28th annual conference and exposition of the American Society of Tool and Manufacturing Engineers will be staged April 21 to 28, 1960 in Detroit's Artillery Armory. Well-known scientists, educators, engineers, and industrialists will participate in the informative programs scheduled during the conference. More than 500 manufacturers and distributors will display their products at the exposition, and a registration of 35,000 is expected.

"Tooling for Productivity" will be theme of the 1960 Tool Show. As always, NEW EQUIPMENT DIGEST will exhibit at the show and you will be welcomed at our booth. For full information on the conference, hotel reservations, or other details, contact: American Society of Tool & Manufacturing Engineers, 10700 Puritan Ave., Detroit 38, Mich.

A. N. Gregg
EDITOR

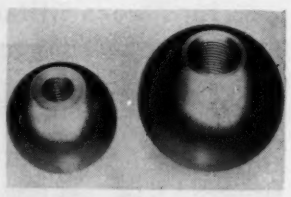
DESCALING NOZZLES threaded for shut-off cap



Width of over-all spray of this descaling nozzle is adjustable to match width of strip run in hot strip mill. External threads accept stainless steel caps to shut off any nozzle in a manifold setup. Nozzles have abrasion resistant carbide inserts in a stainless steel body. Open ellipse is virtually clogproof, and slot type strainers are optional. • **Spraying Systems Co.**, 3211 Randolph St., Bellwood, Ill.

▲ For more details circle NED-14 C on enclosed inquiry slip ▲

STEEL BALL KNOBS in 1½ and 2-in. diameter sizes



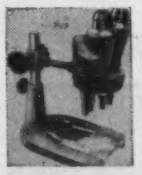
Mild steel ball knobs for screw-on attachment to handles, gear shifts, and levers of machine tools, jigs, and fixtures are built for abuse and rough service. Knobs are offered in 1½ and 2-in. diameters with tapped holes, or blank. Threaded hole for the 1½-in. knob is ⅜-in.-16; and for the 2-in. knob, ½ in.-13, ⅝ in.-11, and ⅝ in.-18 hole sizes are available. • **Jergens Tool Specialty Co.**, 712 E. 163rd St., Cleveland 10, Ohio.

▲ For more details circle NED-15 C on enclosed inquiry slip ▲

UNUSUAL BARGAINS

Check, Measure, Inspect with this 6 POWER POCKET COMPARATOR
(Complete with Leather Case)
MEASURES • Angles • Radii • Circles • Linear—in both decimal inches and millimeters.
Used to check layouts, machining on tools, dies, gauges; to check threads, chamfers, wear on cutting tools, etc.
Stock No. 30,061-AE . . . New Low Price. $19.50 Pstpd.
Send Check or M.O.—or order on open account.

HANDY! FAST! ACCURATE!



STEREO-MICROSCOPE Terrific Buy! American Made!
Other American made Stereos cost $250.00 to $600.00 and more! Now—save well over 50%! Up to 3" Working Distance—Wide 3 Dimensional Field—Used in production, in research, or at home; for inspections, examinations, counting, checking, assembling. 2 sets of objectives on rotating turret. Standard pair of wide field 10X Kellner Eyepieces give you 23 power and 40 power clear, sharp, erect image. Helical rack and pinion focusing. Interpupillary distance adjustable. SO GOOD, WE'LL SHIP ON 10-DAY FREE TRIAL. Stock No. 85,056-AE—full price, $99.50 f.o.b. Barrington, N. J.

LOW PRICED STOP WATCH FOR TIME STUDY, GENERAL USES
Has decimal timer so highly recommended for time study use. Seven jewels and unbreakable mainspring. Dial registers in 1/5th seconds. Dial is divided into 1/100ths of a minute for time study work. Chromium plated case.
Stock No. 30,371-AE . . . . . $15.95 Postpaid (tax incl.)
Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee

24" GOOSENECK MAGNIFIER WITH CLAMP-ON BASE
A 3" diameter magnifier mounted on a 24" long flexible gooseneck. Clamp it on machines, desks, workbenches, etc. Clamp opens to 1 13/16".
Stock No. 70,235-AE . . . . . $8.95 Postpaid
Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee

FREE! Giant CATALOG of OPTICAL BUYS!
OVER 1,000 OPTICAL ITEMS . . . Many on-the-job helps . . . quality control aids! 128 pages—hundreds of illustrations. Many war surplus bargains! Imported instruments! Lenses, Prisms, Magnifiers, Telescopes, Satellite Scopes, Microscopes, Binoculars, etc. Optics for industry, research lab, experimenters, hobbyists, math learning aids. No obligation. Write for FREE Catalog AE

EDMUND SCIENTIFIC CO., Barrington, N. J.

▲ For more details circle NED-16 C on enclosed inquiry slip ▲

new Koncentrik® Stainless PIPE UNIONS HAVE A Fully Confined TEFLON SEAL

Exclusive design is ideal for high pressure and high vacuum applications. Pressure ratings — 2,000#, 3,000#, 4,000# and 6,000#. Screwed or socket weld ends, for pipe sizes ⅛" to 2". Write for catalog today.

Fully Confined

THE SPECIAL SCREW PRODUCTS COMPANY
Bedford, Ohio

SSP

▲ For more details circle NED-17 C on enclosed inquiry slip ▲

Browning GEARBELT DRIVES

COMBINE THE POSITIVE ACTION OF GEARS WITH THE FLEXIBILITY OF BELTS

NEW

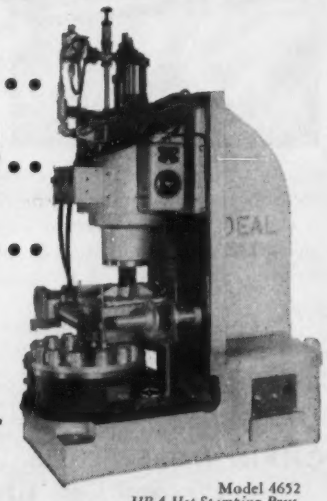
Here is a versatile new drive that provides high mechanical efficiency, *plus* the inherent flexibility of belts. In scores of applications, Browning Gearbelt Drives offer you many cost-saving advantages: 1) A positive non-slip drive. 2) Steel cable strength member won't stretch, needs minimum take-up. 3) Lower initial belt tension reduces bearing loads, prolongs life. 4) Permits smaller pulleys, shorter centers, narrower belts . . . higher capacity in limited space. 5) Lessens noise and heat. 6) Requires little maintenance, no lubrication. *Investigate new Gearbelt Drives today.* Ask your Browning Distributor for complete information and Catalog GB-201, or write **Browning Manufacturing Company, Maysville, Kentucky.**

Browning POWER TRANSMISSION EQUIPMENT

▲ For more details circle NED-18 C on enclosed inquiry slip ▲

IMPRINT.. IMPRESS.. MARK.....

in any COLOR with the IDEAL Hot Stamping Press



Model 4652
HRA Hot Stamping Press, equipped for use on plastic bottle caps.

It's IDEAL for use on rigid plastic bottles, plastic bottle caps, shoe insoles, brief cases, wallets, novelties, purses and many other items. Hot stamping head is available as a separate item for custom installations; adaptable for use on standard presses, air or hydraulic. Get HIGH performance at LOW cost. For prices and complete information, write today.

IDEAL STENCIL MACHINE CO.
134 Ideal Block • Belleville, Ill.

▲ For more details circle NED-19 C on enclosed inquiry slip ▲

Cut Clean-Up Costs with San-Equip WASTE RECEPTACLES

You'll stop litterbugs fast with this unique new solution to the waste disposal problem. This receptacle is designed for convenient use anywhere —indoors or outdoors—but especially where appearance is important.

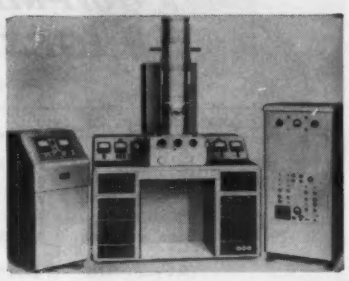
- Eye-level height encourages use.
- Dumps from bottom—eliminates handling of waste; saves time.
- Quick, easy installation, anywhere.
- Fastens securely to post or wall.
- Weather-tight container.
- Low first cost; no maintenance.

WRITE for detailed information.

VEGA INDUSTRIES, INC., SYRACUSE 5, N. Y.

▲ For more details circle NED-20 C on enclosed inquiry slip ▲

ELECTRON BEAM PROCESS
performs welding and machining in vacuum without distortion



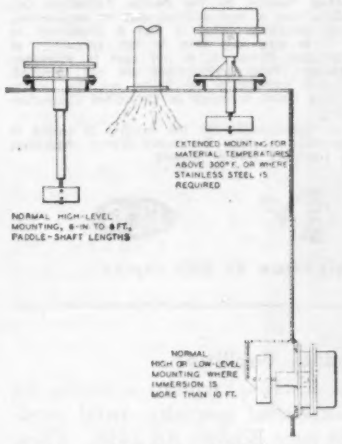
Controlled high density stream of electrons is used by the Zeiss process to change matter physically or chemically. As a welding machine, it produces stainless steel T-sections 0.060 in. thick from sheet stock at a rate of 7 fpm. It butt welds 3/8-in. stainless steel at 1 in. in 3 sec. Welding is done without distortion and a minimum of grain growth in the weld area because of the extremely rapid heating and cooling in a narrow heat-affected zone.

Process also creates accurate holes and slots as small as 0.0008 in. in hard materials. Temperature of 550° F is registered 0.000039 in. from the edge of the cut, although 11,000° F is generated at target point. Precise focusing of the electron beam permits welding of complex shapes in hard-to-weld metals. Welding and machining are performed on a worktable within a vacuum chamber, controlled by electrical relays, or by complete electrical and mechanical automation. • **Hamilton Electrona Inc.**, 40 Wall St., New York 5, N. Y.

▲ For more details circle NED-22 C on enclosed inquiry slip ▲

MATERIAL-LEVEL INDICATOR
two models used in bins or silos

Identical in operation and dimensions, two models of the Fuller material-level indicator regulate the level of pulverized, fine, crushed, or granular materials in bins and silos. Such equipment as feeders, valves, elevators, and conveyors is controlled by starting or stopping drive motor when a predetermined material level is reached. When the sensing paddle located at the desired material level is restrained from turning by the material, two switches are actuated. When it falls away from the paddle, the paddle again turns and the switches are released. Unit is suited for high level or low level indication or control. Model SG-4X is UL-approved for Class II, Group E, F, and G hazardous dust locations, and Model SG-4 is for general purpose use. • **Fuller Co.**, Catasauqua, Pa.



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free sample

OIL SPUNJ

SOAKS UP
- OILS
- GREASE
- CHEMICALS

Oil Spunj, the specially processed sanitary clay, absorbs soluble oil, lubricating oil, grease, acids, chemicals on wood, metal, or concrete. Just spread on 1/8" thick, leave until saturated, and sweep off. Re-use with soluble oil. U. L. Approved. Meets automotive mfgrs. specs. For free sample, data, and prices, write Dept. D-3.

Since 1886

CANFIELD OIL CO.

Cleveland 27, Ohio • VU 3-6630

▲ For more details circle NED-25 C on enclosed inquiry slip ▲

SMITH BEARING ANNOUNCES

SMITH⟨ALIGN BEARINGS FOR CRITICAL APPLICATIONS

Maximum Strength and Wear-life.
Fully Hardened Outer Ring.
Full Bearing Area.

Maximum Precision-Outer Ring precision spherical ground internally for perfect fit to Ball. Controlled clearance fit assures smooth self-aligning action.

Self contained — Two-piece Outer Ring maintains positive interlock at all times—cannot shift from position during installation or when working loads are applied.

Smith⟨Align can be made in any of the steels or special alloys required for your application.

Only Smith⟨Align offers you all these advantages.

Write for Bulletin 59-2.

SMITH BEARING DIVISION

Accurate Bushing Company

443 North Avenue, Garwood, New Jersey

Manufacturers of: Needle Bearings, Cam Followers, Yoke Rollers, Jet Engine After Burner Rollers and Bearing Assemblies, N. A. S. Standard and Special Bearings, High Temperature and Severe Wear Precision Parts.

▲ For more details circle NED-21 C on enclosed inquiry slip ▲

New Economy for Machinery Designers

A STANDARD LINE OF DUFF-NORTON WORM GEAR JACKS

The economies of standardized production can be realized by use of Duff-Norton Worm Gear Jacks for accurate positioning of loads weighing as much as several hundred tons. This standard line of eight jacks ranges from 2 to 100 tons in capacity. When jacks are used in an arrangement, added economy can be realized in raising unevenly distributed loads, since all models now have a uniform raise which permits jacks of varying capacities to operate in unison. Worm gear jacks are furnished with standard raises from 6 to 24 inches. Special raises can also be furnished. Write for Bulletin AD-66-N.

DUFF-NORTON COMPANY

P. O. BOX 1889, PITTSBURGH 30, PA.

▲ For more details circle NED-24 C on enclosed inquiry slip ▲

Find out how to eliminate

11 HIDDEN LOSSES IN YOUR BUSINESS

Send for this informative booklet which contains an analysis of the eleven major communications breakdowns that waste vast sums of money each year in business and industry. It shows how properly planned and modernized internal communications speed up production, improve customer servicing, save executive time, etc. Reprinted three times, the information in this brochure is aiding plants and offices to increase efficiency as much as 25%. Proper communication automatically keeps personnel on the job more hours of the working week, drastically reduces paper work. It betters outside telephone service, automatically assigns priorities to calls, leaves messages, sets up closed circuit conferences with the flick of a switch. All these and more benefits are illustrated and described in this revealing booklet which is available to you without cost. DT7

Write today for your copy of "11 HIDDEN LOSSES IN YOUR BUSINESS!"

DICTOGRAPH PRODUCTS, Inc. 95-25 149th St., Jamaica 35, N.Y.

▲ For more details circle NED-26 C on enclosed inquiry slip ▲

Stop theft or loss of tools and parts--

MARK THEM with an IDEAL Electric Marking Tool

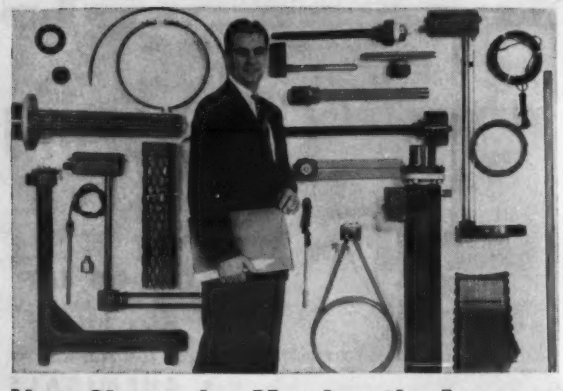
Cutting with 7200 adjustable strokes per minute, the IDEAL Electric Marker is as easy to use as a pencil. It takes just a few seconds to cut names, stock numbers, part numbers or sizes on parts and equipment on the production line, in warehouses, in toolrooms, or laboratories. Special nameplates may be eliminated since the alloy or diamond points mark directly on anything from hard rubber to steel and glass. It operates on AC current. Sold through leading electrical distributors in America. In Canada: Irving Smith, Ltd., Montreal.

IDEAL

IDEAL INDUSTRIES, Inc.
1032-C Park Ave., Sycamore, Illinois
PLEASE SEND Catalog data on Electric Marker.
Name_____
Company_____
Address_____
City_____ Zone____ State_____

▲ For more details circle NED-27 C on enclosed inquiry slip ▲

Liquid Heating Problems?



Your Chromalox Man has the Answers

Backed by the most complete line of electric heaters, he has heaters specifically designed for oils, water, asphalt, paraffin, salt baths, corrosive solutions, heat transfer media. Standard heaters ready for immediate shipment from the world's largest stock.

Call your Chromalox Sales-Engineering Representative for clean, safe, economical *Electrical* answers to *all* your heating problems. Or, write to:

CHROMALOX
Electric Heat
INDUSTRIAL • COMMERCIAL • RESIDENTIAL
EDWIN L. WIEGAND COMPANY
7509 Thomas Boulevard • Pittsburgh 8, Pa.

▲ For more details circle NED-28 C on enclosed inquiry slip ▲

Revolutionary Tool!

New Tee Turner cold draws reducing tees — no fittings necessary!

Here's the most revolutionary development in copper plumbing in a decade—a portable tool that "turns" reducing tee connections in K, L, M and DWV copper tubing (1¼" to 4") in five minutes!

The Tee Turner works equally well in the shop or on the job. It saves literally hundreds, even thousands of dollars on big jobs by 1) eliminating the need for reducing tee fittings, and 2) cutting the number of solder joints at each branch from 3 to 1. Actually reduces labor costs on tubing installations up to 75 percent!

The Tee Turner has been approved and specified for branching by consulting engineering firms all over the U.S. It has been used in the construction of schools, hospitals, motels, industrial plants, commercial buildings, and private residences.

In addition, it has proven ideal for remodeling and maintenance work in large plants and commercial buildings.

Tee Turner tools are available for both water distribution and drainage systems. For complete information fast, write or wire . . .

THE ERIE TOOL WORKS
ERIE, PENNSYLVANIA, U.S.A.

▲ For more details circle NED-29 C on enclosed inquiry slip ▲

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A PENTON PUBLICATION

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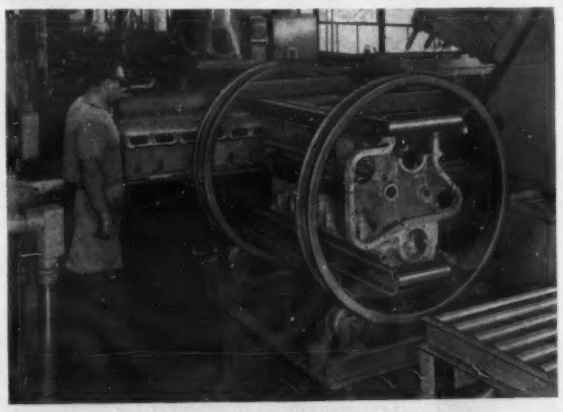
Art Metal Construction Co.—Facilities available for engineering and production of specialty metal products are described in 24-page Booklet Ad 2436. These include tool and die making, forming, finishing, and assembly of all types of sheet, rod, and bar metals. Company makes steel office equipment, bookstacks and furniture, bank counter installations, and architectural and special metal assemblies.

▲ For more details circle NED-30 C on enclosed inquiry slip ▲



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Write today for more information on the entire line of expertly engineered Logan Conveyors.

LOGAN CO., 215 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

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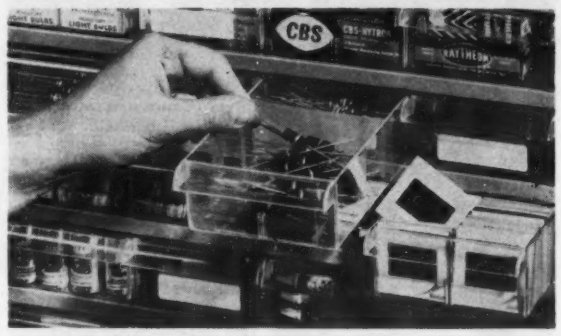

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A-M **AKRO-MILS, INC.**
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Cost Analysis of Actual Installation shows

67% RETURN ON INVESTMENT EACH YEAR*
with
STANLEY MAGIC-DOOR Equipment

**Based on recent study of* MAGIC-DOOR *equipment in automatic operation of double swinging plant doors. Further information on request.*

Returns like this are made possible because MAGIC-DOOR automatic door operating equipment, as a part of a materials handling system . . .

- controls traffic flow
- speeds materials handling
- reduces door and equipment damage
- minimizes spillage and cargo damage
- saves time
- conserves warm and cool conditioned air
- improves working conditions and employee morale.

Industrial MAGIC-DOOR® equipment is low-cost. Pneumatic operators are full-powered for both opening and closing. May be used with photoelectric, pull cord, kick plate, floor button or carpet controls.

Write today for data sheets and other information to:

MAGIC-DOOR SALES
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Dept. C, 58 Lake Street, New Britain, Connecticut

STANLEY
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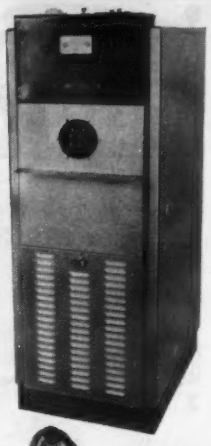
Safe . . . Accurate Controlled Area Heat! with Sherman HF Induction Heaters . . .



New Sherman Induction Heaters provide an extremely versatile tool for all manufacturing operations requiring controlled area heating. Modern 3 megacycle units supply instantaneous pinpoint heat with no contamination and no preheating, permitting a safer, more accurate and reliable method of sealing semiconductors, diodes and transistors, as well as soldering, brazing and heat treating. All Sherman Induction Heaters are designed for use on regular factory voltages and completely automatic units can be built to satisfy individual requirements.

Write for detailed literature.

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Automatic Production Unit

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SHERMAN INDUSTRIAL ELECTRONICS

H F Induction and Dielectric Heaters

Division of / ELECTRONICS DEVELOPMENT, INC. STATE COLLEGE, PENNSYLVANIA

▲ For more details circle NED-34 C on enclosed inquiry slip ▲

NOW 2 BIG JOBS ON 1 MACHINE

. . . without tool change

THE NEW CRAMER PRESSTAKER

(PATENT PENDING)

Press-fitting and final staking of assemblies are *both* done by this radically new production tool . . . at rates impossible with separate machines, with much greater precision than obtainable up to now, and without parts breakage.

- Sub-assembly inventories can be reduced or entirely eliminated, because of far faster production from primary components.
- Standard tooling, completely interchangeable, meets the needs of an enormous range of jobs.
- Set-up time for combined operations is less than 20 seconds, and the operator herself can easily do it.
- Brittle phenolics do not break in staking, because the staking blow is exactly controlled and the stake is properly shaped.
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- Staking blow is pure impact . . . air powered, uniform, and without recoil.
- Operator safety is complete: one hand is on the hold-down lever, the other on the staker release.
- Deep-throat model takes printed circuit boards 20 inches wide.

WRITE TODAY FOR BULLETIN TELLING HOW IT'S DONE

Find out how *you* can do jobs you never thought possible . . . swap assembly problems for profits . . . and give your production line a new boost in output and morale.

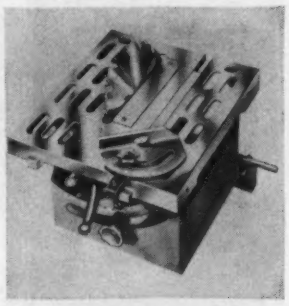
MACHINE TOOL DIVISION

CRAMER CONTROLS CORPORATION

CENTERBROOK, CONNECTICUT

▲ For more details circle NED-35 C on enclosed inquiry slip ▲

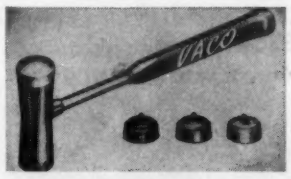
8-IN. TILT ARBOR SAW list price is only $14.95



Now equipped with New Departure lifetime lubricated ball bearings, this 8-in. tilt arbor saw can be used for cross cutting, ripping, beveling, mitering, and dadoing. It will cut up to 2¼-in. stock, and blade tilts 45 degrees. Other features include precision cast iron table and miter gage, universal motor base, and mail order price of $14.95. • **American Machine & Tool Co.**, Royersford, Pa.

▲ For more details circle NED-36 C on enclosed inquiry slip ▲

SOFT-FACE HAMMER shot-loaded head prevents rebound



Three interchangeable tips for the Vaco soft-face hammer are chip, flake, and mushroom proof, and are suited for various types of work. Tips have 1⅜-in. diameter by ⅝ in. thickness. Hammer will not mar, scratch, or cut finished or delicate surfaces. It resists oil, acids, and grease; is shock absorbing; and will not slip. The plastic hammerhead is shot-loaded to prevent rebound. Shaft is Fiberglas. Price is $4.75. • **Vaco Products Co.**, 317 E. Ontario St., Chicago 11, Ill.

▲ For more details circle NED-37 C on enclosed inquiry slip ▲

DRY SPRAY BOOTH disposable curtain catches overspray

An inexpensive disposable curtain collects overspray in the Dispo automatic dry type spray booth for paint, adhesive, or undercoating spray operations. Booth is well ventilated with even flow of air. Standard 5-ft packaged unit, complete with exhaust fan and motor, is rated 8000 cfm. With a clean curtain cloth, booth is designed to exhaust about 300 cfm of air per square foot of cloth area at minimum of 1-in. resistance pressure. Fan will handle 300 cfm per square foot of cloth, trapping about 2 qt of paint overspray on a square yard of cloth. The 5-ft unit lists for $1872; the 10-ft package, for $2634. • **Sheila Forshee**, 8129 St. Paul Ave., Detroit 14, Mich.

▲ For more details circle NED-38 C on enclosed inquiry slip ▲

Aftercooler and Cyclone Separator designed for cleaner, dryer compressed air

The Adams Aftercooler and Cyclone Separator are designed to efficiently condense and remove water from compressed air and process gas. Condensed moisture and entrained dirt and oil are subsequently removed in a cyclone type separator. This unit is scientifically designed for maximum removal efficiency over a wide range of flow rates.

For normal use, units are available to cool gases to within 10° F of the temperature of the cooling water. Specially designed units are available to permit a 2° F approach to cooling water temperature, for application where low moisture content is critical.

Adams Aftercoolers and Separators are available from stock to handle 20 - 40,000 cfm with 10° cooling and 25 - 19,200 cfm where it is necessary to cool within 2°F of the cooling water. Special units can be supplied to suit an unlimited range of requirements. In all cases the maximum pressure loss at rated capacities is ½ psi.

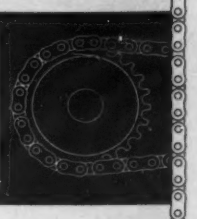
This wide range of sizes enables the economical utilization of Adams Aftercoolers and Separators in virtually all industrial application. For further information on how R. P. Adams' units will solve your compressed air problems and save you money, write today for Bulletin 711. R. P. Adams Co., Inc., 227 East Park Drive, Buffalo 17, New York. *Advt.*

▲ For more details circle NED-39 C on enclosed inquiry slip ▲

POSITIVE MOTION TRANSFER

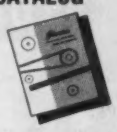
with . . . no cable slippage . . . no complicated gearing

SIERRA MINIATURE MECHANICAL CHAIN AND SPROCKETS



The ideal way to provide precise, positive control in servo systems, gyro systems, special cameras, small precision instruments, and many other miniature and sub-miniature assemblies. Transmits power through several planes simultaneously. Unlimited center-to-center selection. Reduces weight, cost, maintenance. Permits wider tolerances. Designed to operate around minimum 7-tooth sprocket with root diameter .250 inches. Chain pitch .1475 inches; Weight .45 oz. per lineal ft. Material: stainless steel, or other materials, including non-magnetic beryllium copper.

NEW CATALOG



Contains useful application data, specifications, tables on chain pitch and sprocket sizes, suggestions for calculating center-to-center distance. *Write for yours today.*

T. M. REG.

123 E. Montecito Avenue, Sierra Madre, California

Sierra ENGINEERING CO.

▲ For more details circle NED-40 C on enclosed inquiry slip ▲

M/44 Indicating Pressure Transmitter

. . . with pointer directly linked to measuring element

You can check pressure readings at a glance on the Foxboro M/44 Pneumatic Pressure Transmitter. Its 4-inch indicator scale and eye-catching red pointer are clearly visible as far away as 20 feet. The M/44 is a compact, integral instrument . . . no attachments or "makeshifts" . . . no separate gauges or indicators. And because the pointer is directly linked to the measuring element, the transmitter continues to indicate pressure, even in the event of total air failure. "Convenience-design" makes calibration in the field a cinch. Drawn-steel, weatherproof, air-purged case with tough polyester plastic cover. Calibrated accuracy: ±½%. Ranges from 0-30 inches of water to 0.6000 psi. Write for Bulletin 456-20A. **The Foxboro Company, 663 Neponset Ave., Foxboro, Mass.**

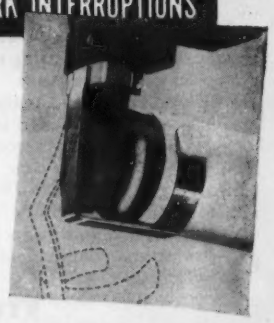
FOXBORO INSTRUMENTATION

REG. U.S. PAT. OFF.

▲ For more details circle NED-41 C on enclosed inquiry slip ▲

STOP! INJURIES AND WORK INTERRUPTIONS

from falling fluorescent-tube accidents



Fluorescent tubes sometimes fracture. Vibration and shock may release them from fixtures. Wherever fluorescent lighting is installed there is the possibility of physical injury and property damage resulting from falling tubes.

Don't wait for accidents to happen. For a few cents each you can keep tubes in place, prevent falling, insure against poisoning, contamination and spoilage, avoid injuries, work interruptions and loss of time

Install Den-El fluorescent lamp guards, easily and quickly, with a screw driver. Permanent, positive protection. Stainless steel. Easily sprung aside for relamping or cleaning. Two guards for each lamp.

Types for all fixtures, also tubes in series

For 40W tubes, per C **$19.00**

For 100W tubes, per C **$22.50**

ORDER TODAY DIRECT

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SAFETY EQUIPMENT FOR EVERY HAZARD

▲ For more details circle NED-42 C on enclosed inquiry slip ▲

The LIGHT that STAYS LIT!

Read what Heckett Engineering Co., of Butler, Pa., says . . .

"We used to replace at least one bulb each night in the floodlights on our magnet crane. Our crane picks up and drops a 20-ton ball. The shudder of the crane is death on conventional floodlights. Five weeks ago we installed Sturdilites, and the original bulbs are still burning!"

NEW Super Rough Service

STURDILITE

Under heavy vibration, in various kinds of field installations, NEW STURDILITE is averaging as much as 10 to 100 times longer life than conventional floodlights. Quickly pays for itself in bulb savings. Provides vastly improved lighting. Synchro-harmonic designed . . . an exclusive NEW STURDILITE concept. Models from 6 to 120 volts for all requirements in heavy construction, mining, quarrying, etc. Write for literature.

PHOENIX PRODUCTS COMPANY
4773 N. 27th St., Milwaukee 9, Wis.

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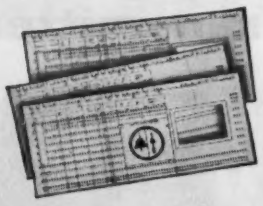

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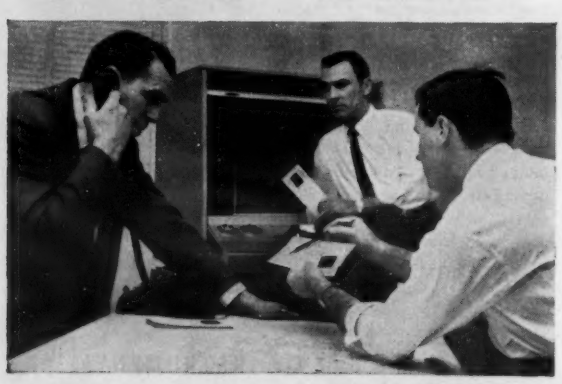

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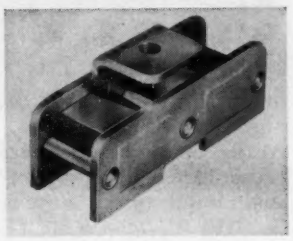
▲ For more details circle NED-46 C on enclosed inquiry slip ▲

VOLTAGE REGULATORS
transistorized, for 480-v service

Transistorized Autostatic voltage regulator with no moving parts or contacts functions instantly to correct voltage fluctuations on constant-speed alternators. It has an on-off switch, voltage-adjusting rheostat, cross-current resistor for three-phase units, and a potential transformer with primary taps for 120, 208, 240, and 480-v service. Sensitivity is ±1 per cent. Three models handle up to 3.4-amp exciter shunt field current. Semiflush or chassis mountings are optional. • **Lake Shore Electric Corp.**, 500 Willis St., Bedford, Ohio.

▲ For more details circle NED-47 C on enclosed inquiry slip ▲

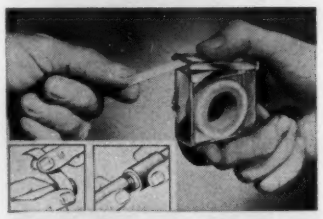
CONVEYOR MAGNETS
hold wide variety of work in process



Standard and special design Alnico permanent magnets are available for use in conveyor systems to hold work through metal fabricating and finishing operations. Magnets are also offered for use as tank retrievers, to hold safety shields, as part of sweeping equipment, to separate metal sheets for feeding, and as positioning holders for welding operations. • **Empire Magnetics Inc.**, 111 E. Clinton St., Maumee, Ohio.

▲ For more details circle NED-48 C on enclosed inquiry slip ▲

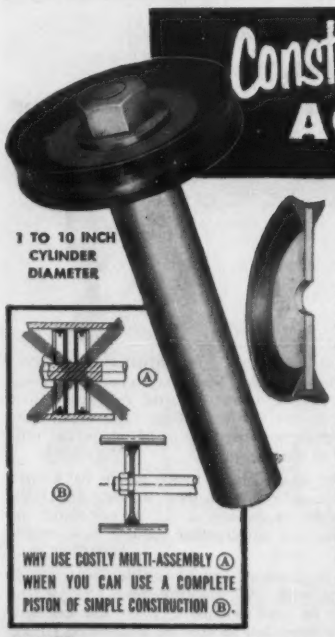
CUTTER-DISPENSER
for pipe joint sealing tape



Clean handling and use of Thred-Tape pipe joint sealing tape are facilitated by this cutter - dispenser which will accommodate either a 288 or 567-in. roll, ½ in. wide. The clear plastic dispenser incorporates a chrome plated steel cutter. Thred-Tape will seal pipe connections under severe service conditions involving corrosive chemicals, caustics, hydraulic and aromatic fuels, as well as toxics, biologicals, and gases. It is self-lubricating, prevents seizing and galling, and remains plastic for easy disassembly of connection. Temperature range is from −250 to 500° F. • **Crane Packing Co.**, Dept. ND-5, 6400 Oakton St., Morton Grove, Ill.

▲ For more details circle NED-49 C on enclosed inquiry slip ▲

Constant Sealing ACTION WITH . . .



DOUBLE ACTING ONE-PIECE ALLIS PISTON CUPS

This is a combined piston and cup packing unit. Simple, extremely economical, it serves the same purpose as far more complicated and expensive pistons. Easy to install, downtime is held to minimum, cannot be installed backwards. Design simplicity means fewer inventory of parts. Gives long life, dependable service. Made of specially compounded rubber bonded to solid metal disc.

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SINCE 1890
CHICAGO-ALLIS MFG. CORP.
Producers of CHICAGO BELTING • ALLIS RUBBER • ALLIS SEAL Products
130 North Green Street • Chicago 7, Ill.

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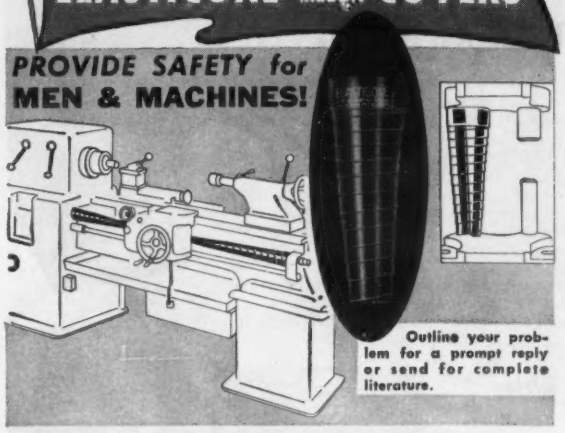
OUT GO SHUTDOWNS . . . INJURIES . . . REPAIRS ELASTICONE® STEEL RIBBON COVERS

PROVIDE SAFETY for MEN & MACHINES!



Outline your problem for a prompt reply or send for complete literature.

Elasticones are metal-formed, cone shaped covers that open and close automatically to provide protection against dirt, damage, and catching of limbs, for all precision moving parts. Available in all finishes and sizes from ⅜" diameter up to 60" long.

Stocking distributors in principal cities

ELASTICONE DIVISION
CENTRAL SAFETY EQUIPMENT CO.
6607 Marsden St., Philadelphia 35, Pa. • DEvonshire 3-4788

▲ For more details circle NED-51 C on enclosed inquiry slip ▲

Jenkins' METLKORS automatically clean all kinds of conveyors . . . rubber covered, fabric, band, mesh, bar, plate, string. Adapt easily to any system . . . save time, money. Nylon bristles and metal cores resist corrosion.

1960 Catalog Packed With Data Write Today!

Specify Jenkins' METLKOR—the original—the best Metal Core brush

METLKOR® CYLINDER BRUSHES and LIFEWOOD® WOOD BACKED BRUSHES

M. W. JENKINS' SONS, INC.
Serving Industry for 80 Years
P.O. Box 68, Dept. 15, Cedar Grove, Essex County, N. J. • CEnter 9-5150

▲ For more details circle NED-52 C on enclosed inquiry slip ▲

22 EXTRA FEET in every pound of ECONO-STITCH BOX STITCHING WIRE

Here's Why:

Standard — Standard flat stitching wire weighs more per linear foot. Therefore, you get fewer feet of wire per pound and none of the extra ECONO-STITCH advantages.

Econo-Stitch — ECONO-STITCH stitching wire eliminates the unnecessary weight of standard flat wire, yet retains full width for holding, full thickness for stiffness, and 15% savings in wire costs.

Fits your standard equipment

Special rounded shape gives you more linear feet per pound, at no extra cost. Rounded-shape ECONO-STITCH presents a smoother closure. No snag, no scuff. Available in any quantity, copper or galvanized finish, in these common sizes: .017, .020, .023 x .103. Fits any standard stitching machine without attachments.

Write for full ECONO-STITCH story today.

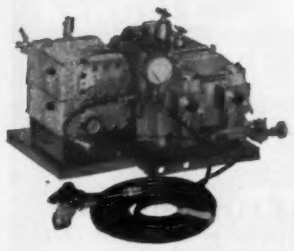
ENTERPRISE WIRE COMPANY
Blue Island, Illinois
Also manufacturers of flat stitching wire in a wide range of sizes—and fine specialty wire.

▲ For more details circle NED-53 C on enclosed inquiry slip ▲

no other spray system offers ALL the advantages of NORDSON HOT AIRLESS

With Nordson Hot Airless, Heat is used to control viscosity. This means:

- Less solvents are used
- Higher solids may be applied
- Lower operating pressures — less over spray
- Paint savings of 30% are common
- Solvent flash-off and drying times are cut sharply
- Spray booth and exhaust costs kept to minimum

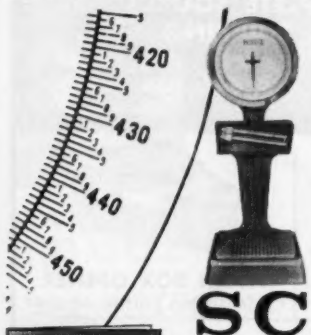


Heat control of viscosity also assures better flow out — eliminates orange peel and blushing, provides smoother, finer finishes, better control, greater uniformity — less rejects.

Let us show you how Hot Airless can help you do a better job. Write for further information,

NORDSON CORPORATION
72 Jackson St., Amherst, Ohio

▲ For more details circle NED-54 C on enclosed inquiry slip ▲



HUNDREDS OF HOWE DIAL SCALES

DIAL SCALES make your weighing easier and faster . . . and HOWE has hundreds of standard dial scales for quick delivery at favorable prices.

These are the latest and most modern dial scales with many unusual features including HOWE's exclusive Tape Drive Dial Mechanism!

Whatever your scale problem may be, see your local HOWE representative — or contact HOWE SCALE, Rutland, Vermont.

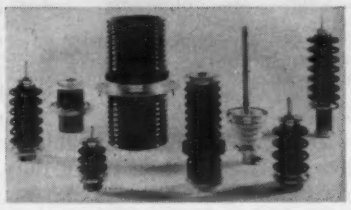
NEW! DIAL SCALE Catalog. Illustrated; gives specifications on standard and special scales. Send for your free copy today!

HOWE

THE HOWE SCALE COMPANY, INC.
RUTLAND, VERMONT
A SUBSIDIARY OF AMERICAN MANUFACTURING COMPANY, INC.
HOWE SCALES OF CANADA, MONTREAL, QUEBEC

▲ For more details circle NED-55 C on enclosed inquiry slip ▲

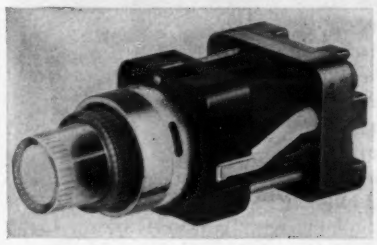
SOLDER-SEAL BUSHINGS
bonds metal parts to porcelain



Choice of shapes, sizes, and ratings is available in leak-proof solder-seal bushings for low voltage applications on hermetically sealed capacitors, test transformers, and similar types of electrical equipment. Custom made bushings consist of a porcelain unit with a thin fired-on metal coating to which metal caps, flanges, and rings can be attached by soft solder techniques. Completed attachment will rupture the glaze from the porcelain before it rips the metallized band from the glaze. • **Lapp Insulator Co.**, 100 Church St., Le Roy, N. Y.

▲ For more details circle NED-57 C on enclosed inquiry slip ▲

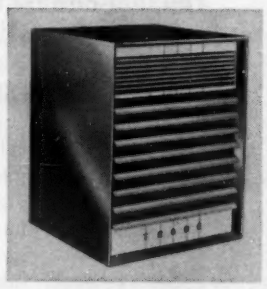
LIGHTED PUSHBUTTON
available with a button guard



Pressure connectors facilitate wiring of this oil-tight illuminated pushbutton. The single-hole mounted unit also serves as a pilot light and is offered with a button guard to prevent accidental operation. Range of voltage ratings and choice of six color caps are available. Contacts are rated for heavy duty service. • **Square D Co.**, 4041 N. Richards St., Milwaukee 12, Wis.

▲ For more details circle NED-58 C on enclosed inquiry slip ▲

GAS-FIRED HEATERS
in 30,000 to 250,000-Btu capacities



Line of gas-fired heaters includes propeller and blower units in ten sizes from 30,000 to 250,000 Btu and duct units in six sizes from 60,000 to 250,000 Btu. They have removable heat exchangers and burners, scientifically designed propellers or centrifugal fans, and wide adjustment of louver air diffusers. Air stream can be diffused for gentle, widespread flow, or split into two separate streams for blanketing two areas at the same time. Blower and propeller units are equipped with limit controls, and duct heaters have modulating main gas valves to maintain constant final temperature. • **Trane Co.**, 2018 Cameron Ave., La Crosse, Wis.

▲ For more details circle NED-59 C on enclosed inquiry slip ▲

BRYANT

THREAD AND GROOVE GAGES

GRANITE SURFACE PLATES

Savings you can count on—accuracy you can guarantee! You get *both* with fast, easy-to-read Bryant precision gages and long-lasting, "head of the grain", true quartz granite Surface Plates.

FREE FACT FOLDERS!

SEND TODAY . . .

. . . for complete details and prices on the full line of Bryant Internal and External Thread and Groove Gages, and Granite Surface Plates.

EX-CELL-O CORPORATION
GREENVILLE PLANT
GREENVILLE, OHIO

XLO
EX-CELL-O FOR PRECISION

60-6

▲ For more details circle NED-60 C on enclosed inquiry slip ▲

TROMBETTA SOLENOID CORP.

MILWAUKEE WISCONSIN
U.S.A

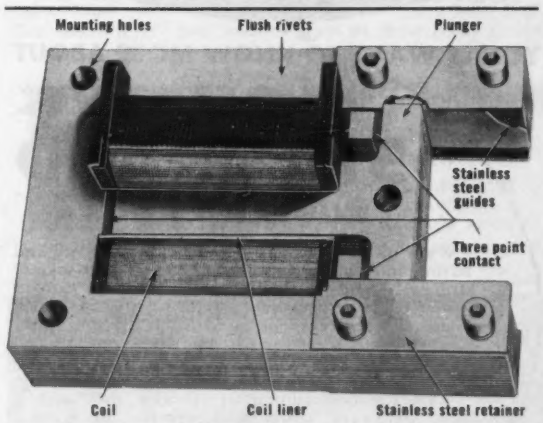
329 N. Milwaukee Street • Phone BRoadway 1-8347

NA-700 LINE OF SOLENOIDS

The ultimate design in Guided T Plunger Solenoids

Patented March 10, 1959
Developed in 1952
Patent No. 2,877,390

WE DESIGNED THEM!
WE DEVELOPED THEM!!
WE PATENTED THEM!!!
THEY ARE OURS!!!!



No clatter! No chatter!!

FEATURES

Positive three point contact
Heavy stainless steel guides

RESULTS

Longest life expectancy; reliable operation throughout entire life; silent operation in sealed position; mountable in any position, at any angle; no heavy grease required to cover up poor design; no grunting when mounted horizontally.

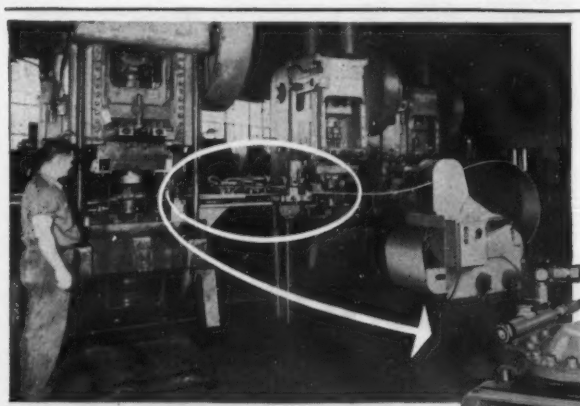
AVAILABLE

In a multitude of standard sizes, pull or push type; also custom built to satisfy customer's requirements; also for OEM, and replacement trade.

TROMBETTA has the original solenoid. Don't let anyone sell you imitations. Request additional information.

"TROMBETTA"
is the answer to:
ALL SOLENOID QUESTIONS

▲ For more details circle NED-61 C on enclosed inquiry slip ▲

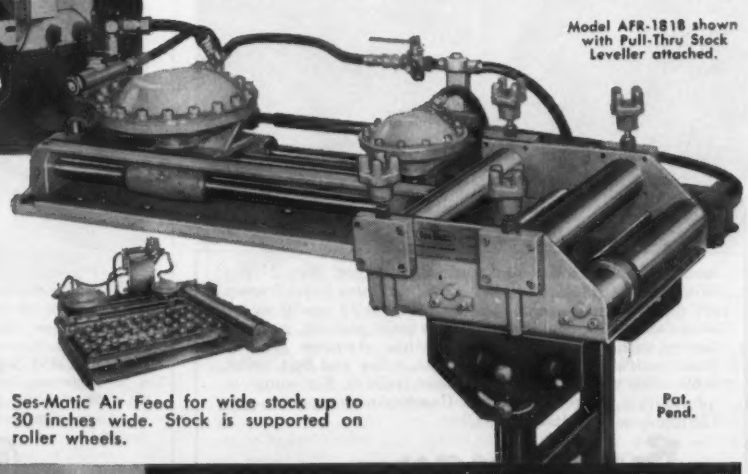


• The Ses-Matic "SPACE-SAVER" Line featuring the Ses-Matic Air Feed, Pull-Thru, Stock Leveller and Coil Cradle.

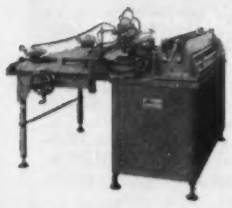
Ses-Matic AIR FEED

The Secret of Successful, Accurate Feeding of . . .

STEEL, ALUMINUM, PLASTIC, LEATHER, ETC.



Model AFR-1818 shown with Pull-Thru Stock Leveller attached.



Ses-Matic Double Air Feed for materials up to 72 inches wide. This unit feeds stock 72" wide by .074 thick and removes coil bend with a Pull-Thru Leveller.

Ses-Matic Air Feed for wide stock up to 30 inches wide. Stock is supported on roller wheels.

Pat. Pend.

Ses-Matic

Write for complete literature on all models of Ses-Matic Air Feeds and other Press Room Equipment.

SPECIAL ENGINEERING SERVICE, INC.
7636 Wyoming • Dearborn, Michigan

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YOU NEED A . . .

DUPOR WATER COOLED **SMOKE MASK**

A complete combination of respirator and goggles that provides lung and eye protection for painters, foundrymen, smelters, oil refiners, chemists, firemen, etc. The respirator is water-conditioned with all incoming air passing through cool, clear water. The goggles are the famous "Nod & Shake" fog-proof and gas-tight type. No finer protection, anywhere! Order sample today, $5.00 postpaid.

H. S. COVER, DEPT. 305, SOUTH BEND 14, INDIANA

"Respirators for Industry since 1894"

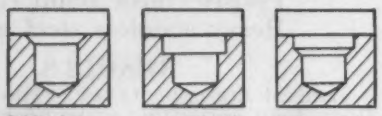
▲ For more details circle NED-62 C on enclosed inquiry slip ▲

YOU'LL WANT TO KNOW MORE ABOUT

MOHAWK STANDARD SUBLAND DRILLS

Want to eliminate tap breakage, burring, jig and fixture movement, time and valuable part losses? Mohawk Standard Drill-Chamfer sublands can do just that for you...plus, the obvious benefit of clean, concentric chamfered holes that will speed tapping operations, increase tap life, improve accuracy and lower drilling, tapping and scrap costs. Yes, these "standards" drill and chamfer simultaneously. They're faster, infinitely accurate, they outlast ordinary tools and remain positively concentric through repeated regrinds.

And, they're easy to select for any job, because Mohawk (and their distributors) stock all practical sizes in 3 step lengths and 3 shank styles for immediate delivery.



Subland Drill-Chamfer for Regular, Fluteless, Pipe and Heli-Coil Taps — Subland Drill-Counterbore for Socket Head Cap Screws — Subland Drill-Drill for Tap Drill and Body Clearance

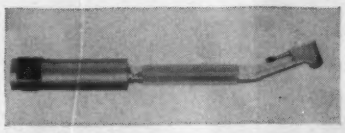
WRITE...WIRE...OR 'PHONE...for full information on the complete line of Mohawk Standard Subland Drills.

Mohawk TOOLS, Inc.
Montpelier, Ohio

World's largest producer of Sublands

▲ For more details circle NED-63 C on enclosed inquiry slip ▲

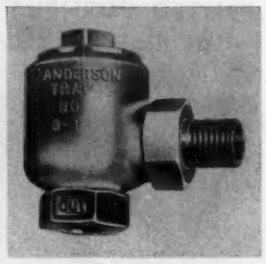
FLEXIBLE SHAFT HANDPIECE
for wide range of precision work



Compact and light in weight, No. 55 angle handpiece for flexible shafts is particularly suited for reaching relatively inaccessible areas. Resembling a dentist's drill, it is a heavy duty tool for electronic, instrument, and metalworking as well as tool, die, and mold work. It has latch type tool holder, hardened steel gears, chromium finish, and is easily attached to flexible shaft machines. Equipped with two mandrels, it can be used with standard unmounted accessories, dental type burs, abrasive points, and discs. • **Foredom Electric Co.**, Bethel, Conn.

▲ For more details circle NED-64 C on enclosed inquiry slip ▲

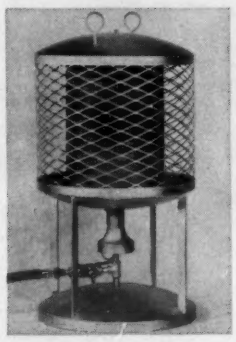
THERMOSTATIC STEAM TRAP
built-in union eases installation



Downward flow design with no retaining cores or passages prevents condensate from cooling and freezing in the Quik-Flex thermostatic steam trap, now available with a built-in union at slight added cost in ½ and ¾-in. sizes. The trap is disconnected by loosening a single fitting. Phosphorus bronze and Monel bellows with constant spring load opens instantaneously when contacted by cold air or condensate. Removable cap of forged steam bronze or cast semisteel permits easy access to the interior. Valve and seal are made of Anderloy. Traps discharge up to 31,000 lb of condensate per hour, and are suited for pressures to 250 psi. • **V. D. Anderson Co.**, 1935 W. 96th St., Cleveland 2, Ohio.

▲ For more details circle NED-65 C on enclosed inquiry slip ▲

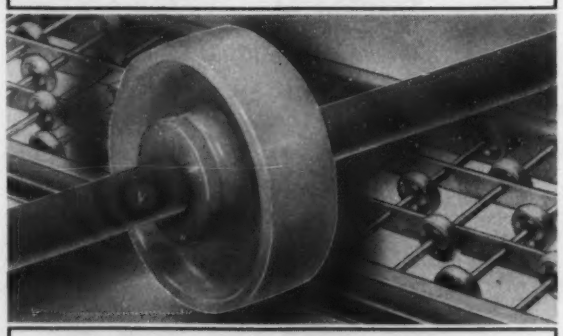
PORTABLE GAS HEATER
100,000 and 50,000-Btu units offered



Hard-to-heat indoor or outdoor work areas are made comfortable with the Space-Ray radiant gas heater which has a cylindrical perforated stainless steel heat exchanger surrounding a large cast-iron burner. It has safety pilot and controls for floor or suspended use. A safety guard covers the red hot screen. Heater is offered in 36-in. high, 18-in. diameter and 32 in. high, 16-in. diameter sizes rated 100,000 and 50,000 Btu, respectively. Heater operates on natural gas. • **Bright Leaf Industries**, Box 3115, Charlotte 3, N. C.

▲ For more details circle NED-66 C on enclosed inquiry slip ▲

NEW NYLON WHEELS
End Corrosion—Kill Noise on Buschman Conveyors



Available for any Buschman wheel conveyor. New Nylon Wheels with cadmium plated axles and *Galva-finish* frames are quiet running, corrosion free. Especially useful under steam and water conditions, such as meat packing, poultry, fishery, other food processing plants. Another plus in Buschman's complete line of wheel, roller and belt units, table-cable conveyors and overhead trolleys. For complete information, write The E. W. Buschman Company, 4482 Clifton Ave., Cincinnati 32, Ohio.

Buschman CONVEYORS

Complete Conveyor Systems for all Types of Industries—Engineered, Manufactured, Installed
Representatives in Principal Cities

▲ For more details circle NED-67 C on enclosed inquiry slip ▲

NESTING PANS (Steel)

TOP DIM.	DEPTH
18" x 10"	6"
18" x 12"	6"
18" x 12"	8"
22" x 11"	6"
22" x 14"	5½"

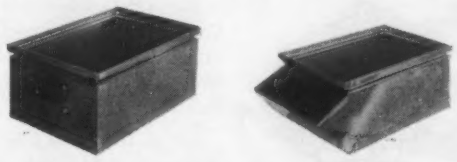
STACK & NEST

Top dimensions exclude handles. Pans tailored to fit your product furnished at no additional cost.

Sterling Stack & Nest pans have an advantage when space for empty boxes is a problem. STACK&NEST pans are centrally positioned by hinged cross angles with side stops.

REGULAR AND BIN FRONT STERLING STACKING BOXES

Sterling Stacking Boxes have the strongest top rim. Made in a variety of sizes.



STERLING FACTORY EQUIPMENT CO.
Manufacturers of handling and storage equipment since 1935
Providence, R. I.

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YOUR COMPLETE SOURCE OFFICE & SHIPPING

KNIVES

LEWIS SAFETY KNIFE
Automatic Blade Guard

FLASH BOX OPENER
Professional carton opener

FLASH TWINE CUTTER
Cuts twine safely

PUSH BUTTON SAFETY KNIFE
Cuts everything with safety

VEST POCKET KNIFE
Push-button action

FLASH CARTON STAPLE REMOVER
Removes stitches quickly

Write for complete catalog on inkmarkers, knives, etc.

FLASH MANUFACTURING COMPANY
169 MURRAY STREET, NEWARK 5, N. J.
In Canada: Seal-O-Matic of Canada, 2 Matilda St., Toronto 8, Canada

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Togetherness

matters with industrial fasteners, too!

Togetherness, industrial style, has a special meaning at Thompson-Bremer because we are one of the few fully integrated manufacturers of Sems, lock washers, thread-cutting screws, terminals and cold-headed specialties. It means we can give you faster, more specialized service at competitive prices. You want your assemblies to go together economically and stay together reliably—that's what our EVERLOCK fasteners have been doing for our customers since 1918. Send for catalog and samples or call your EVERLOCK representative, and let's get together on your fastener needs.

AMF Everlock INDUSTRIAL FASTENERS

Thompson-Bremer & Co.
Dept. 30, 228 N. LaSalle St., Chicago 1, Ill.
Division of American Machine & Foundry Company

▲ For more details circle NED-70 C on enclosed inquiry slip ▲

DO YOU USE PRESSURE REGULATORS

SEND FOR NEW FREE CATALOG ON KENDALL and GOVERNAIRE

Catalog gives performance and other data on 18 models of precision pneumatic pressure regulators. (pipe sizes ¼" to ¾" NPT)

STRATOS
A DIVISION OF FAIRCHILD ENGINE & AIRPLANE CORPORATION
INDUSTRIAL PRODUCTS BRANCH
West Babylon, L. I., N. Y.

▲ For more details circle NED-71 C on enclosed inquiry slip ▲

UNIVERSAL MOTORS
½, ¾, and 1-hp models offered

Three stock models of series - wound universal motors are rated ½ hp at 5000 rpm, ¾ hp at 7500 rpm, and 1 hp at 10,000 rpm. All three are built in frame size 4334, have pad type bases, and exhibit high operating speed and starting torque. Built in aluminum housings, motors operate on 115 v dc to 60-cycle ac and are non-reversible. Cast iron housings, 230-v operation, and reversibility are among modifications possible. • **Robbins & Myers, Inc.**, Universal Motor Div., 1345 Lagonda Ave., Springfield 99, Ohio.

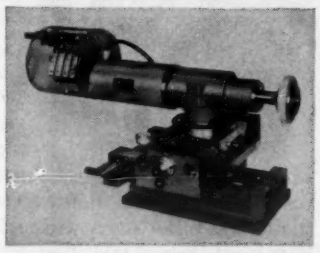
▲ For more details circle NED-74 C on enclosed inquiry slip ▲

CONCRETE DRILLING OUTFIT
method eliminates dust and noise

Dry drilling of large holes in reinforced concrete in areas where dust and noise would be prohibitive is made possible by the Method A system. It involves the use of a Cyclo-core drilling machine using carbide bits, a dust exhaust swivel, power unit, and dust collector. Dust and steel cuttings are removed from the hole, reducing heat, friction, and noise to a minimum. Powder and chips are sucked up through filters as fast as they are made, and air is cleaned before expulsion. Drillings are made to desired depth without stopping to clean out powder and cuttings. • **New England Carbide Tool Co.**, 55 Commercial St., Medford 55, Mass.

▲ For more details circle NED-75 C on enclosed inquiry slip ▲

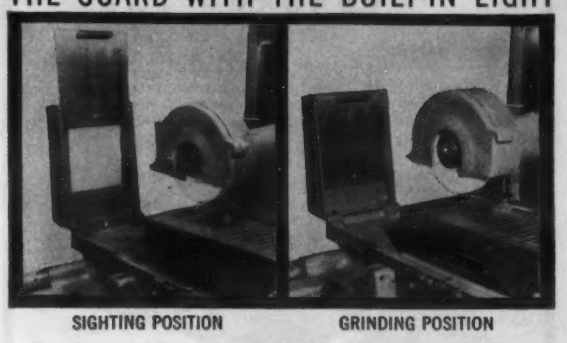
ELECTROLYTIC GRINDING SPINDLE
runs with up to 28-in. wheels



This 1000-amp Anocut spindle for electrolytic grinding has a 2-hp, 3600-rpm motor and is mounted on a heavy duty universal slide to which are attached dial indicators for measuring feed of work in 0.0010 in. Spindles are motorized or belt driven to run with up to 28-in. diameter wheels. They are available to operate from 50 to 3000 amp at speeds up to 10,000 rpm. Total concentricity is less than 0.000050 in. • **Pope Machinery Corp.**, 261 River St., Haverhill, Mass.

▲ For more details circle NED-76 C on enclosed inquiry slip ▲

INTRODUCING THE CUTLAS GUARDLITE
THE GUARD WITH THE BUILT-IN LIGHT



SIGHTING POSITION GRINDING POSITION

A unique, new safety attachment for surface grinders that serves as both a safety guard and sighting light.

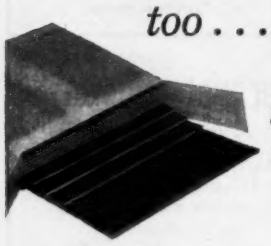
- Increases efficiency of machine operator as much as 100%
- Eliminates make-shift back of the wheel lighting
- Provides the needed non-glare light for sighting between work piece and grinding wheel
- Completely waterproof, can be used for either wet or dry grinding.
- Fits all surface grinders. Guaranteed under normal usage, except glass and bulb

FOR ADDITIONAL INFORMATION, WRITE:
CUTLAS TOOL & MFG. CO. 4344 LAWNDALE LYONS, ILLINOIS

▲ For more details circle NED-78 C on enclosed inquiry slip ▲

Hear *the difference*

Feel it, *too . . .*



with machines on ISOMODE® PADS

It's so simple . . . so effective. Cut the size you need from standard sheet of Isomode Pad. Place under machine feet . . . hear and feel the difference! Long-life, resilient neoprene absorbs vibration . . . helps cut plant noise . . . saves wear on machines and floors alike. Box of ten 18"x18" Isomode Pads is enough for 80 tons of machinery. Make a test . . . convince yourself. Write for details.
® *T.M. Reg. U.S. Pat. Off.*

MB ELECTRONICS
A DIVISION OF TEXTRON ELECTRONICS, INC.
1066 State Street, New Haven 11, Conn.

▲ For more details circle NED-72 C on enclosed inquiry slip ▲

NOW!
Branded for lifetime identification

HOW IT'S DONE: The mark is embossed onto, not stamped into, the chain.

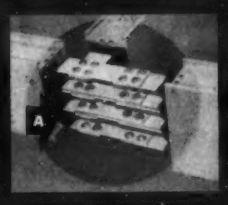
CHAIN BUYERS & USERS—Now you can be sure of the make of chain you are getting and of the grade (strength) of the chain you are using . . . a definite safety advantage. Available on Inswell Proof Coil, BBB, High Test and the ½" and smaller sizes of Herc-Alloy chain.

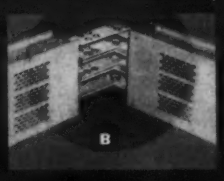
SPECIFY "CM" CHAIN

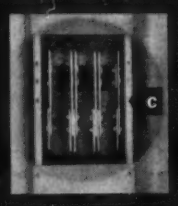
CM CHAIN
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
Regional Offices: NEW YORK CHICAGO • CLEVELAND SAN FRANCISCO • LOS ANGELES
In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ont.

▲ For more details circle NED-79 C on enclosed inquiry slip ▲

Eliminate costly factory-built "tees" and "elbows"







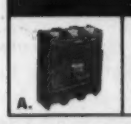
cut installation and maintenance costs . . .

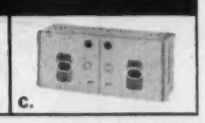
THIS NEW LOW IMPEDANCE BUS DUCT features a unique splicing system . . . permits "tees" and "elbows" to be built on the job using standard bus duct sections . . . without the premium cost of special factory-built units. Splicing at "tees" (A), "elbows" (B) and straight section joints (C) reduced by as much as 50%. Result: lower initial costs, less delays, faster installation, less maintenance, higher salvage value. Available in Feeder and Plug-in types. Write for Bulletin 3-125: Federal Pacific Electric Company, General Offices: Dept. 335, Newark 1, New Jersey.

FPE FEDERAL PACIFIC ELECTRIC COMPANY
The Best in Electrical Distribution and Control Equipment

▲ For more details circle NED-73 C on enclosed inquiry slip ▲

Centralized power distribution at low cost with new shallow depth switchboards





Only 14 inches deep and rigidly constructed—these switchboards take a variety of interchangeable control and distribution units of modular dimension . . . consolidates motor starters, fusible switches, and circuit breakers into one installation . . . requires less floor space . . . reduces installation and maintenance costs . . . provides greater flexibility in meeting future requirements. For details, write for Bulletin #3-310: Federal Pacific Electric Co., General Offices: Dept. 319, Newark 1, N. J.

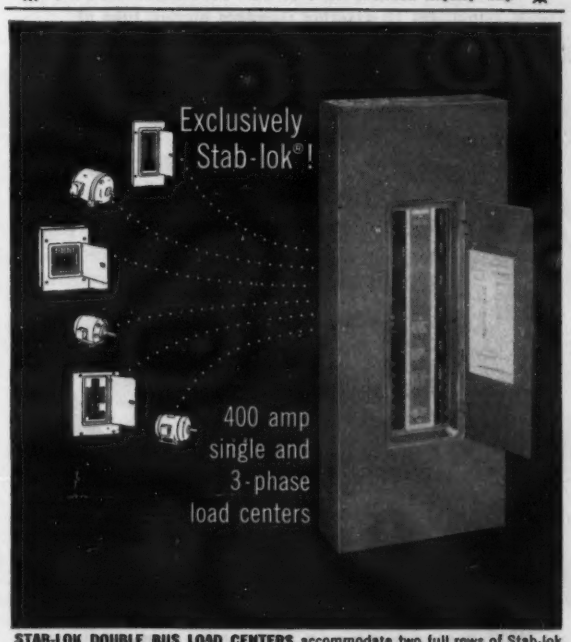
A. TYPE AB CIRCUIT BREAKERS from 15 through 800 amps.

B. QMQB FUSIBLE SWITCH UNITS from 30 through 1200 amps.

C. MAGNETIC OR MANUAL MOTOR STARTERS in NEMA sizes 0 through 5.

FPE FEDERAL PACIFIC ELECTRIC COMPANY
The Best in Electrical Distribution and Control Equipment

▲ For more details circle NED-77 C on enclosed inquiry slip ▲



STAB-LOK DOUBLE BUS LOAD CENTERS accommodate two full rows of Stab-lok breakers . . . mains rated through 400 amps, 240 volts, 100 amp maximum branch circuits. Stab-lok Branch Circuit Breakers. Available in 1, 2, or 3 poles rated 15 through 100 amps up to 240 volts a-c. All bear the label of Underwriters' Laboratories, Inc. Write for Bulletin #1-125. Federal Pacific Electric Company, General Offices: Department 444, Newark 1, New Jersey — The Best in Electrical Control, Distribution and Power Equipment.

FPE FEDERAL PACIFIC ELECTRIC COMPANY
Affiliated with Cornell-Dubilier Electric Company

▲ For more details circle NED-80 C on enclosed inquiry slip ▲

GEMCO TERMINAL BLOCKS are a SNAP...

TO WIRE
- FULL VISIBILITY
- OPEN TERMINALS
- CAPTIVE SCREW

TO ASSEMBLE
- COMPACT, SEGMENTED CONSTRUCTION
- POSITIVE INTERLOCKING
- AVAILABLE IN 15, 25 AND 50 AMP BLOCKS

TO MODIFY
- SNAP-IN, SNAP-OUT BLOCKS FOR EASY ADDITION OR REMOVAL
- SNAP-IN MARKING STRIP FOR CIRCUIT IDENTIFICATION

TO CHECK OUT
AVAILABLE EQUIPPED WITH TERM-A-FUSE FOR CHECKING OUT FAULTY CIRCUITS IN SECONDS

Available assembled, in kits or in bulk units.
Write for Bulletin 457.

GEMCO ELECTRIC COMPANY
25685 West Eight Mile, Detroit 40, Mich.

▲ For more details circle NED-82 C on enclosed inquiry slip ▲

BETTER TOOLS MEAN A BETTER JOB

THE RIGHT TOOLS FOR YOUR JOB — P&R Co.

"HANDY ANGLE" SUPREME SAW

A portable hand saw that cuts just about everything —wood, steel pipe, sheet metal, masonite. Fits any ¼" drill or flexible shaft. None will out-perform!... and its price also defies comparison. $29.75 Complete.

Includes 16 assorted standard blades, tube of lubricant, flat shoe, Allen wrench.

"GRIPS RITE" Angle Head

FOR 1/2" ELECTRIC DRILLS

The right tool for close work—at its best when the going is tough. Special design fits comfortably in your hand, A 2-to-1 gear reduction gives maximum control in tight spots...3 flats on the shank shaft provide non-slip chucking.

PLANETOR

"MAGIC FEED" PORTABLE BITS

Famed "magic feed" bits in 57 sizes, ¾" to 4½", tops for tough boring. Replaceable pilots, interchangeable heads, shanks 3½" to 18". One test will convince you. Write for detailed price list.

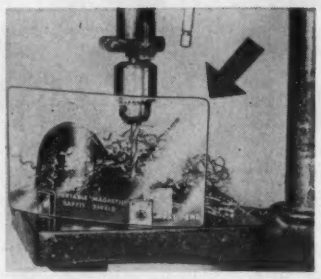
All PARCO TOOLS FULLY GUARANTEED

- For information contact your jobber or write direct to:

Price & Rutzebeck
P. O. Box 30 • Hayward, California

▲ For more details circle NED-83 C on enclosed inquiry slip ▲

MAGNETIC SAFETY SHIELD
protects operators of machines



Eyes, face, hands, arms, and clothing of personnel operating drill presses, lathes, grinders, and other machines are protected by this portable magnetic safety shield. Two permanent ceramic magnets on its lower edge hold it in any position. Made of transparent and flexible heavy vinyl sheet, it measures 10¼ x 5½ in. and has rounded corners. On large machines, two or more shields can be used. Price is $2. • **Better Specialties, Inc.**, 605 W. Washington Blvd., Chicago 6, Ill.

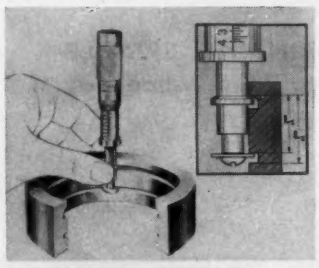
▲ For more details circle NED-84 C on enclosed inquiry slip ▲

HOUR METERS
record machine operating time

Cumulative operating time in minutes and hours up to 100,000 hours is recorded for various types of 120 to 480-v ac equipment by 2½ and 3½-in. diameter Hobbs hour meters. Sealed units withstand extreme shock and vibration. The odometer has black-on-white hour figures and red-on-white tenth figures. Applications include machine tools, air compressors, air conditioners, pumps, generators, conveyors, and refrigeration units. • **John W. Hobbs Corp.**, Yale Boulevard & Ash Streets, Springfield, Ill.

▲ For more details circle NED-85 C on enclosed inquiry slip ▲

GROOVE LOCATION GAGE
for beveled and rectangular grooves



Distance from the outer wall of a beveled or rectangular retaining ring groove to a plane of reference located 0.4 to 1.4 in. from the groove wall is measured by the Truarc groove location gage. It also measures the location of O-ring grooves, thread reliefs, and other internal recesses in bores and housings, and external grooves on shafts and other parts with 1.5-in. or longer diameters. Furnished removable flange may be affixed to the spindle to provide an artificial reference shoulder where none exists on the part being checked. Price is $42.50. • **Waldes Kohinoor, Inc.**, Truarc Retaining Rings Div., 47-16 Austel Place, Long Island City 1, N. Y.

▲ For more details circle NED-86 C on enclosed inquiry slip ▲

Sensational Results of Scale Removal!

With The New

MOGUL *Kwik-Kleen*

From all parts of the country come reports—

"It's fast, efficient, economical"

"Does not harm man nor metal"

MOGUL KWIK-KLEEN does a rapid scale removing job and is completely safe to use. It is non-corrosive and does not attack metal, valves, gaskets, packing or paint. Does not harm workman's skin, his clothing and shoes. No undesirable odors nor toxic fumes.

The North American MOGUL Products Co.
STANDARD BUILDING
CLEVELAND 13, OHIO

Write today for Case History Brochure on MOGUL KWIK-KLEEN results.

40 YEARS OF PROGRESS...AND STILL GROWING

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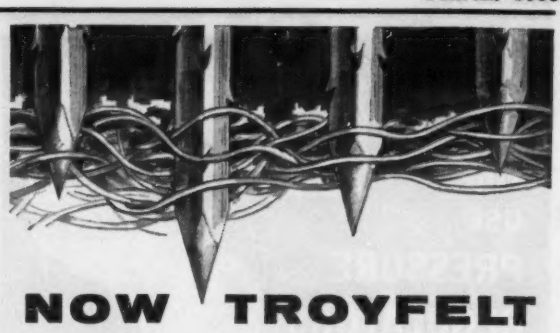

NOW TROYFELT

A versatile new family of synthetic felts

Troyfelt is a non-woven synthetic felt available in Dacron,* Orlon,* and other synthetics. Unlike other non-wovens it has no chemical binders...the individual fibers are joined mechanically. This gives Troyfelt many unique properties *along with* all the long-lived properties of the synthetics—a marked resistance to chemical attack, heat, abrasion and wear!

Proved superior in applications like these—as a filter • wicking • vibration isolation • packing padding • gaskets

(*DuPont trademark)

SEND FOR SAMPLES AND DATA

TROYFELT ...*by the pioneers of non-woven synthetic felts*

INDUSTRIAL PRODUCTS DIV. • TROY BLANKET MILLS
200 Madison Avenue • New York 16, New York

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Disc meter

Turbine meter

Heavy-duty Badger water meters

maintain high accuracy . . . low pressure loss

Badger industrial disc meters available from ⅝" to 2"; turbine meters, 2" to 12" inclusive. 2" stainless steel oscillating piston models also available. All handle flows to 150° F.

Typical applications: Batching meters for chemical and fertilizer plants; interdepartmental metering; regulation of water treatment. Electric alarm, electric contacting and remote reading registers offered as accessories.

Write for descriptive literature

Badger Meter Mfg. Co.
Industrial Products Div. • Milwaukee 23, Wisconsin

▲ For more details circle NED-89 C on enclosed inquiry slip ▲

add years of

RUST-FREE LIFE

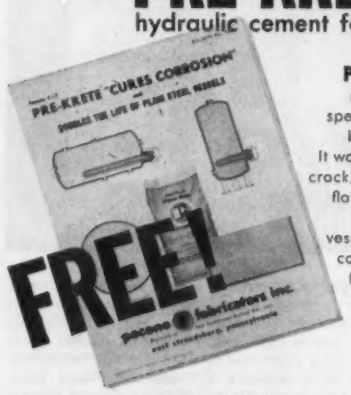
to your plain

STEEL VESSELS—

line them with

PRE-KRETE

hydraulic cement formula



PRE-KRETE is the corrosion resistant cement lining with special additives and intimate blending of all ingredients. It won't permit corrosion, won't crack, won't chip, won't color or flavor water. It adds years of rust-free life to plain steel vessels. It lowers maintenance costs appreciably. Available from a nation wide network of franchised applicators. Send for FREE booklet on PRE-KRETE. Address —

Division of The Patterson-Kelley Co., Inc.

pocono fabricators inc.
East Stroudsburg, Penn.

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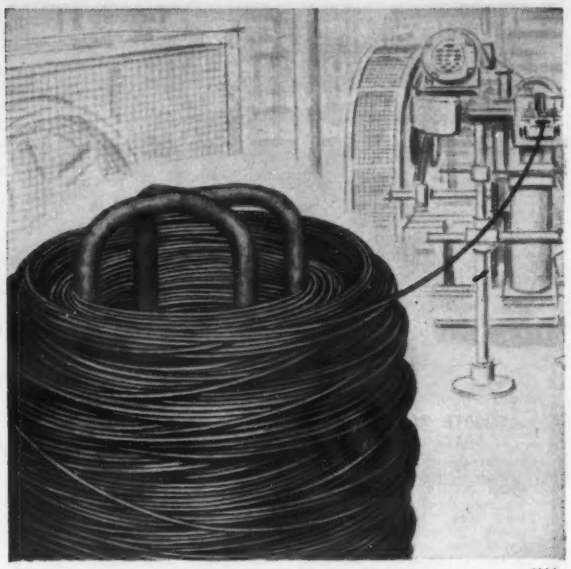

7504

CF&I WIRE
Packaged for your production

Reduce downtime and increase production efficiency with CF&I Wire, in all sizes, types and finishes, packaged in extra long lengths. Write for *Catalog 704 Rev.*

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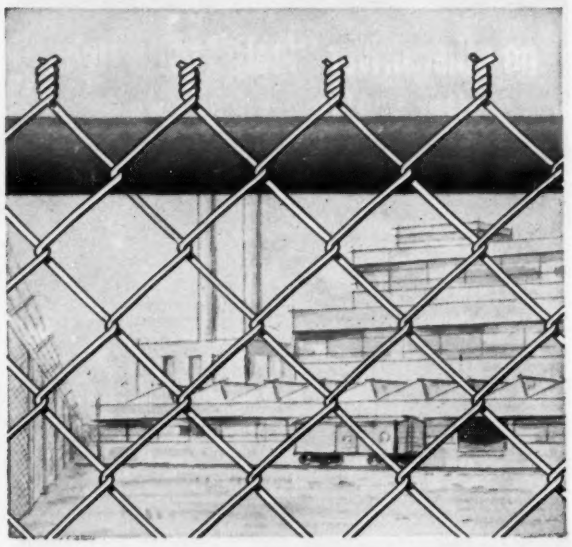
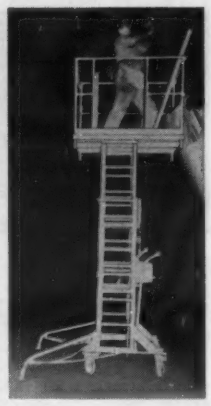


REALOCK...
The fence that says stop

Your insurance against pilferage, vandalism, arson . . . long-lasting Realock Fences. Made of galvanized steel or aluminum with or without barbed wire tops. All types described in *Catalog F-915.* 7502

▲ For more details circle NED-92 C on enclosed inquiry slip ▲

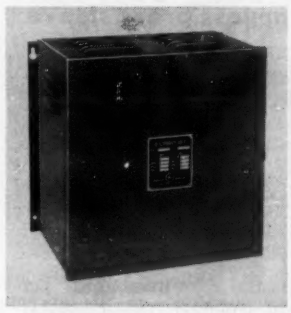
WORK PLATFORM
raises to 11, 16, or 20 ft



Overhead maintenance, painting, lighting, and cleaning operations are facilitated by this improved work platform. It is only 6 ft 8 in. high, yet will raise to 11, 16, or 20 ft as needed. It passes through a 32-in. wide door opening. Standard platform size is 2 x 4 ft, but other sizes can be specified. A crank-operated self-locking winch and two steel cables raise the platform. An outrigger brace prevents tilting of the welded steel, caster-equipped unit. • **Atlas Industrial Corp.**, 849 39th St., Brooklyn 32, N. Y.

▲ For more details circle NED-94 C on enclosed inquiry slip ▲

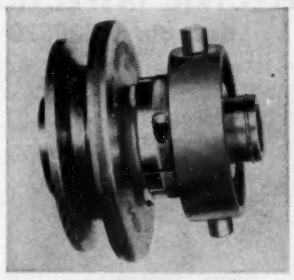
RECTIFIER POWER UNITS
12 models have ½ to 16-amp ratings



Direct current is produced from existing alternating current power lines by this series of low cost rectifier type industrial power units. They operate from either 115 or 230 v ac, 50/60 cycles, single phase, and provide an output of 125 or 250 v dc. Twelve models have continuous duty capacities ranging from ½ to 16 amp. Applications include operation of direct current motors, relays, solenoids, magnetic chucks, brakes, and separators. • **Opad Electric Co.**, 43 Walker St., New York 13, N. Y.

▲ For more details circle NED-95 C on enclosed inquiry slip ▲

SMALL DISC CLUTCH
has ball bearing V-belt sheave



Type KB and KBB disc clutches are stocked in 4⅛, 4¾, and 5-in. OD sizes for use with A and B belts having pitch diameters from 3.4 to 4.6 in. Clutches have integral single or double V-belt sheaves mounted on double seal ball bearings. They are designed for heavy duty service on keyed stub or through shafts with ⅝ to 1¼-in. diameters, at speeds up to 4000 rpm. Engaging and disengaging is by ball bearing manual shift lever on the Type KBB unit and by bronze shifter for less severe service on the Type KB clutch. • **Edgemont Machine Co.**, 2200 Home Ave., Dayton 17, Ohio.

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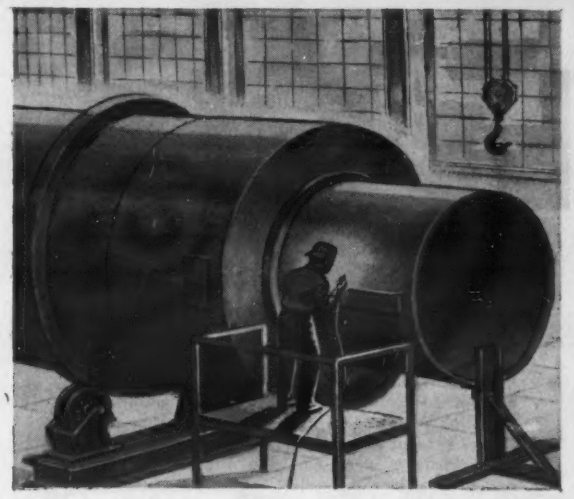

CF&I-CLAYMONT
Steel Plate Products
Manufactured to your exact requirements

Carbon, alloy and stainless-clad steels in plate form or fabricated into spun and pressed heads and other plate parts. For further information write for specific catalogs. 7505

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CF&I-WICKWIRE SPRINGS
Designed to your specifications

CF&I engineers will help you design the correct spring for any application. Compression, Extension, Torsion, Flat, Special. Get details in *Catalog S-500.* 7501

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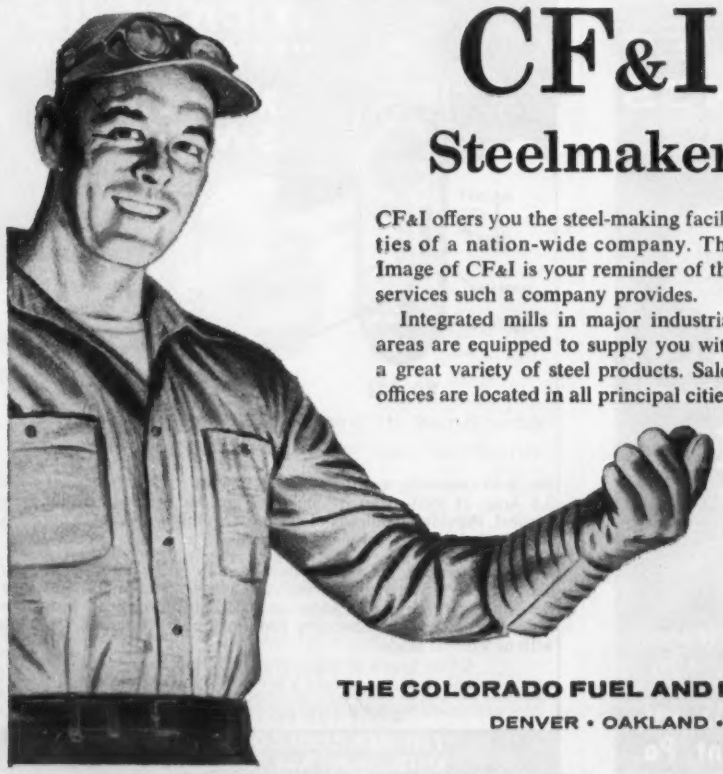

CF&I
Steelmaker for Industry

CF&I offers you the steel-making facilities of a nation-wide company. The Image of CF&I is your reminder of the services such a company provides.

Integrated mills in major industrial areas are equipped to supply you with a great variety of steel products. Sales offices are located in all principal cities.

Over 40 well-stocked warehouses from coast to coast assure quick and efficient delivery on all orders.

For an outline on the range and diversification on CF&I Steel Products, write for Catalog G-50 Rev. For more direct service and information, contact your local CF&I sales office.

Plants at: Pueblo, Colo. • Oakland and South San Francisco, Calif. • Buffalo, N. Y. • Claymont, Del. • Palmer, Mass. Birdsboro, Pa. • Roebling, N. J. • Trenton, N. J.

7500

THE COLORADO FUEL AND IRON CORPORATION

DENVER • OAKLAND • NEW YORK

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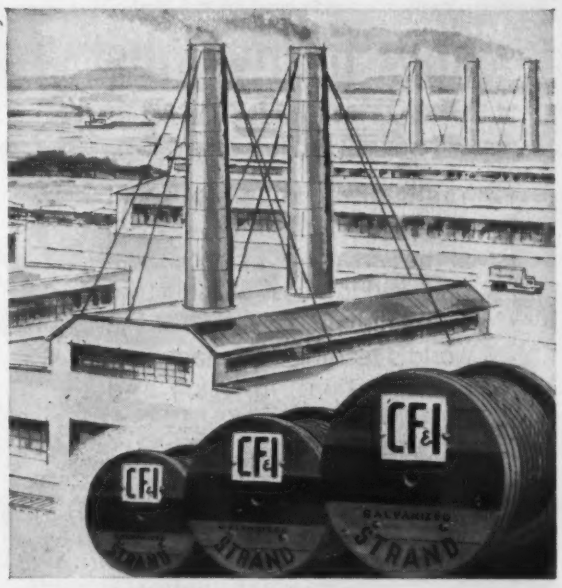

CF&I Galvanized Steel Strand
gives sure support

Manufactured to ASTM Specifications A-122, A-363 or to your own specifications in 7 and 3-wire constructions. Write for *Catalog WFR-264.* 7503

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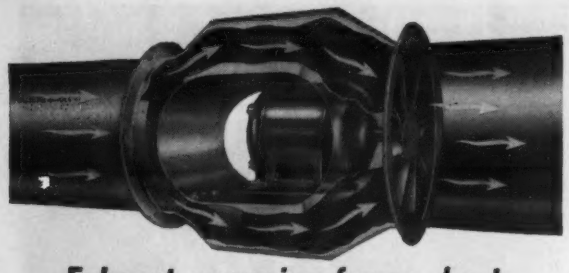

Exhaust corrosive fumes, heat without 90° turn in air flow

Direct-drive BIFURCATOR® fans are installed at any angle like a section of ductwork, so no elbow or motor mounting platform is required. Sharp-corner deflection of exhaust flow is eliminated, friction is reduced and velocity is increased. This *original* BIFURCATOR design bypasses exhaust flow *around* the motor which is shielded by a protective housing. Available in a choice of metals or with corrosion-resistant coatings for operations with high acid atmospheres. Sizes and capacities range from air delivery of 913 cu. ft./min. (12 in. diam. fan, 1/20 h.p. motor) up to 45,000 cu. ft./min. (48 in. diam. fan, 20 h.p. motor.) WRITE Dept. NED-360 FOR FREE, ILLUSTRATED BULLETIN.

De Bothezat® FANS
A DIVISION OF
American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

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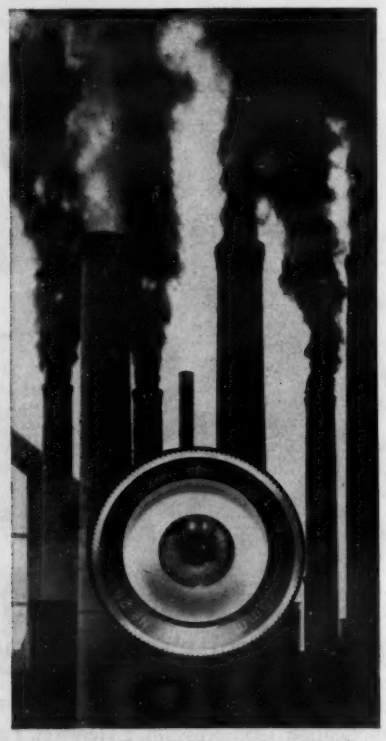


GPL closed-circuit TV fills hundreds of business needs today for such companies as Bell Aircraft, Brookhaven National Laboratory, Chrysler, Consolidated Edison, Convair, Firestone, General Motors, Link Aviation, Martin, New York Savings Bank, U. S. Steel.

how many jobs

could GPL Industrial TV help **you** do better?

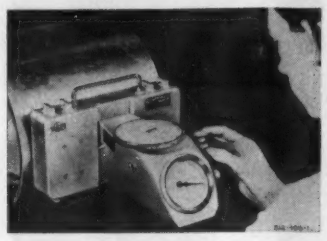
You'll never know until you investigate! You'll be amazed at the versatility, simple operation, and low cost of Industrial TV systems by GPL, one of the world's leading manufacturers of industrial, military and broadcast TV.

Write us today for free, illustrated brochure on GPL—the most complete line in the industry.

GPL DIVISION
GENERAL PRECISION INC.
PLEASANTVILLE, NEW YORK

▲ For more details circle NED-101 C on enclosed inquiry slip ▲

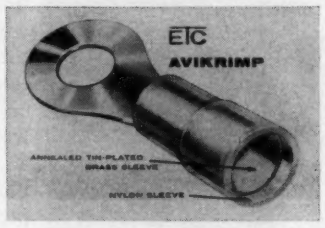
PORTABLE HARDNESS TESTER applies 10 to 150 kg loads



British-made Indentometer portable hardness tester can be fitted with an electromagnetic or chain clamp for making hardness tests anywhere in the plant or the field. Part size and shape do not limit use. Hydraulic pressure unit applies loads from 10 to 150 kg for normal Rockwell testing procedures, and readings are direct in A, B, or C scales. Standard equipment includes a cone diamond penetrator, a 1/16-in. diameter steel ball penetrator, standard C-clamp, flat and V anvils, and a test block. Unit weighs only 18 lb. • **Steel City Testing Machines, Inc.**, 8817 Lyndon Ave., Detroit 38, Mich.

▲ For more details circle NED-102 C on enclosed inquiry slip ▲

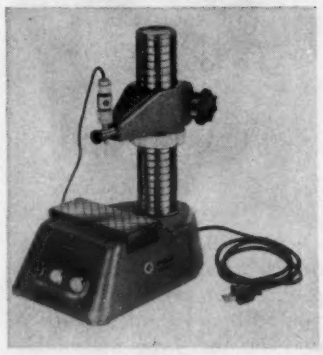
SOLDERLESS ELECTRIC TERMINAL reinforced by seamless brass sleeve



Avikrimp solderless electrical terminals are reinforced by a seamless, annealed, tin-plated brass sleeve over the regular terminal barrel. Crimped in the same operation as the barrel, the sleeve skirt permanently grips the wire insulation. Terminal also has a permanently attached Nylon insulating sleeve which extends beyond the metal support sleeve. Temperature range, continuous duty, is −40 to 250° F; intermittent duty, up to 350° F. Terminal is offered in all tongue types for wire ranges 22-16, 16-14, and 12-10 AWG. • **ETC Inc.**, 990 E. 67th St., Cleveland 3, Ohio.

▲ For more details circle NED-103 C on enclosed inquiry slip ▲

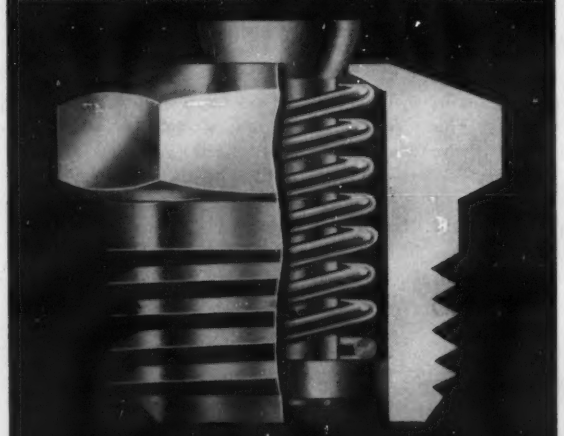
ELECTRIC INSPECTION GAGE detects 0.000020 in. deviation



Off-size condition of parts is detected within 0.000020 in. and indicated by flashing lights with this electric limit gage for inspection uses. Signal lights report oversize as well as undersize and correct size by flashing green, red, or yellow light. Since the eye perceives light signals quickly, gaging is fast as well as accurate. • **Scherr-Tumico Co.**, 200 Lafayette St., New York 12, N. Y.

▲ For more details circle NED-104 C on enclosed inquiry slip ▲

PRESSURE RELIEF
Lubrication FITTINGS



by
UNIVERSAL
MANUFACTURERS OF LUBRICATION FITTINGS AND ACCESSORIES
For our new Industrial Catalog write
UNIVERSAL LUBRICATING SYSTEMS, Inc.
Industrial Division • Oakmont, Pa.

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A NEW—AND BETTER—"TWIST" TO AN OLD OPERATION: THE ECON-O-VEYOR SPINDLE SPRAY CONVEYOR

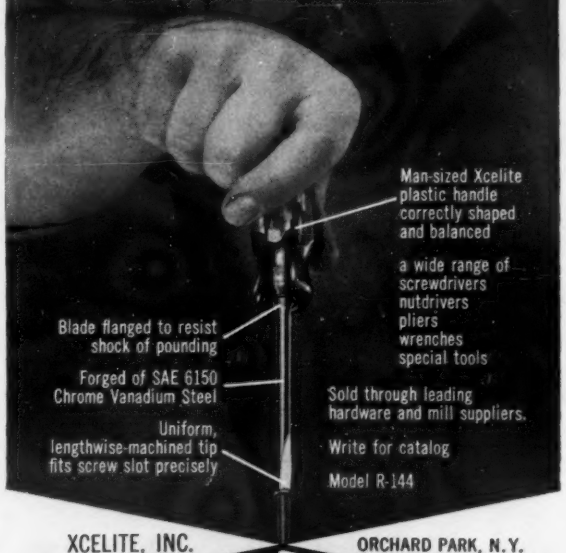
SMOOTH MOTION FOR SPRAYING . . . YET TAKES NO SPACE AT ALL FOR SHARP TWISTS AND TURNS!

The Problem: to carry bottles on spray conveyors with 18" high spindles, on 4" centers, through electrostatic spray operation, travel 80' to mesh belt conveyor (where bottles are transferred for run through high-temperature oven); spindle conveyor must then duck under oven in tight area. ECON-O-VEYOR engineers simply turned the famous ECON-O-VEYOR overhead conveyor upside-down and added spindles. Actual photo shows result: the ECON-O-VEYOR spindle conveyor, which makes a horizontal turn and a vertical drop simultaneously—forming a true spiral—in a very limited space. The only conveyor on the market permitting floor-level painting—even in areas where no other conveyor can operate—while drying can take place high overhead to save valuable floor space.

Distributed Nationally By
CREAMERY PACKAGE MFG., CO. INC.
offices in major cities in U. S. & Canada
or write or call:
ECON-O-VEYOR
224 Glen Cove Ave., Glen Cove, N. Y. IIndependence 1-3360

▲ For more details circle NED-106 C on enclosed inquiry slip ▲

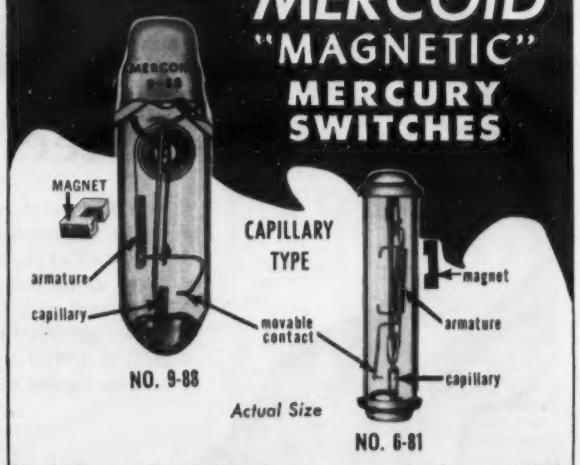
no other driver "feels" quite right after you've used Xcelite !



XCELITE, INC. ORCHARD PARK, N.Y.
XCELITE
Canada: Charles W. Pointon, Ltd., Toronto, Ont.

▲ For more details circle NED-107 C on enclosed inquiry slip ▲

MERCOID®
"MAGNETIC"
MERCURY SWITCHES



No. 9-88 (normally open) maximum ampere rating 1 Amp. at 24V., 0.5 Amp. at 115V. Can be mounted on any angle up to 30° from vertical. Provides hundreds of cycles per minute. Available normally closed. Various types of leads available.

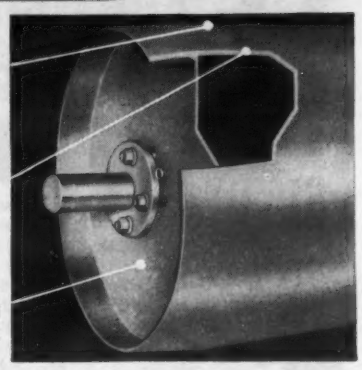
No. 6-81 (normally open) maximum ampere rating 0.9 Amp. at 24V., 0.3 Amp. at 115V. Available normally closed. Has metal end caps. Can be mounted at any angle up to 45° from vertical. Speeds in excess of 400 cycles depending upon load characteristics. Available with or without leads.

Other types of magnetic switches also available (electrical rating up to 5 Amp. at 115V.)

WRITE FOR BULLETIN NO. 50
THE MERCOID CORPORATION
4211 Belmont Ave., Chicago 41, Ill.

▲ For more details circle NED-108 C on enclosed inquiry slip ▲

NEW CURVE CROWN® BY STEPHENS-ADAMSON WELDED ALL-STEEL PULLEYS



*CURVE CROWN DESIGN
Accurately formed Curve Crown on rim outer ends eliminates belt stretch and wear . . . increases belt training effect more than 100%.

STURDY RIM CONSTRUCTION
Absolutely round one piece pulley rims formed under hydrostatic pressure. Seam machine-welded inside and out insures 100% weld penetration.

ACCURATE END PLATE ASSEMBLY
End plates O.D. and I.D. machined to insure concentricity between bore and outer rim. Pressed fit . . . submerged arc welding for maximum efficiency.

FEATURING "SQUEEZELOCK" HUB DESIGN
Revolutionary "Squeezelock" Hub design provides gripping power for full torque transmission without keyways plus eliminating distorting loads against pulley end plates.

*PATENT APPLIED FOR

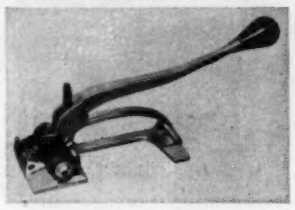
WRITE FOR BULLETIN 558
STANDARD PRODUCTS DIVISION
STEPHENS-ADAMSON MFG. CO.
12 RIDGEWAY AVENUE • AURORA, ILLINOIS
PLANTS LOCATED IN: LOS ANGELES, CALIFORNIA CLARKSDALE, MISSISSIPPI • BELLEVILLE, ONTARIO
▲ For more details circle NED-100 C on enclosed inquiry slip ▲

PORTABLE WINCH-HOIST
7-lb unit rated 1000-lb capacity

Rigged right side up, upside down, horizontally, or at any angle, this Model 1000-15 portable winch-hoist will do many lifting, lowering, pulling, stretching, and bending jobs. The 7-lb, 1000-lb capacity unit is equipped with 15 workable feet of 3/16-in. aircraft cable which stores on the drum. It has high strength aluminum alloy frame, and slipproof interlocking pawl system. Made in standard and marine grades, it is factory tested to 200 per cent of rated capacity. • Lug-All Co., 355 Lancaster Ave., Haverford, Pa.

▲ For more details circle NED-112 C on enclosed inquiry slip ▲

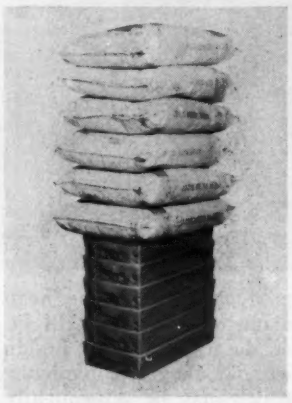
STRAPPING TOOL
reel-fed unit handles various jobs



New gripper opening on Model 1915 reel-fed strapping tool facilitates loading and aligning of 3/8, 1/2, 5/8, and 3/4-in. steel strapping. Tool can be operated by right or left-handed person with reel in front of, or behind the operator. Seal can be placed behind or in front of the take-up wheel. Tool is lightweight and operates efficiently in horizontal or vertical position. • A. J. Gerrard & Co., 1950 Hawthorne Ave., Melrose Park, Ill.

▲ For more details circle NED-113 C on enclosed inquiry slip ▲

TOTE BOXES
weigh 4 lb, yet support 600 lb



Hardened fiberboard used in these improved tote boxes is fireproof, rigid, and will not tarnish copper or brass. Each 1/2-cu ft capacity box shown weighs less than 4 lb, yet can support 600 lb (see picture) without distortion. Custom and standard sizes are available in three styles with capacities of 1/100 to 5 cu ft. Sizes range from 2 1/2 x 4 x 1 1/2 in. to 24 x 30 x 15 in. Typical box with 3.2-cu ft capacity costs from $2.75 to $3.67, depending upon quantity. • Beacon Boxes, Inc., Box 483R, Massillon, Ohio.

▲ For more details circle NED-114 C on enclosed inquiry slip ▲

LOOK AT THE LEAK-PROOF DYNAPUMP

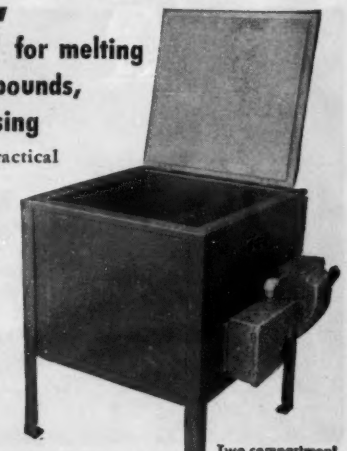
MODEL 420-D

COMPACT—integral pump-motor weighs only 7 lbs.
EASY TO MAINTAIN—can be serviced with a screwdriver.
RUGGED—wetted parts made of bronze or stainless steel.
VERSATILE—can be installed in any position.
LEAKPROOF—no seals, no stuffing box, self-lubricated.
LOW COST—prices start at $30 (OEM)
Write now for information . . . Dynapump Division, Fostoria Corporation, Huntingdon Valley, Pennsylvania.

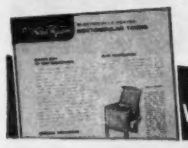
DYNAPUMP®
▲ For more details circle NED-116 C on enclosed inquiry slip ▲

Sta-Warm ELECTRICALLY HEATED
RECTANGULAR TANKS for melting and dipping compounds, cleaning, degreasing

Custom built to any practical size, shape, temperature requirements you may specify. Because it is heated uniformly on sidewalls and bottom by the famous "Sta-Warm Method" it will make your most difficult-to-handle compounds behave. Close temperature tolerances.



Two compartment dipping tank. 44 gal. cap. Heated gate valve drain.



Write FOR DESCRIPTIVE BULLETIN TODAY

Sta-Warm ELECTRIC CO.
130 N. CHESTNUT ST., RAVENNA, OHIO
Subsidiary of ABRASIVE & METAL PRODUCTS CO.
▲ For more details circle NED-117 C on enclosed inquiry slip ▲

SO QUIET you can hardly hear it . . . so efficient it gets dirt other sweepers miss . . . so economical it often pays for itself in a year!

New Tennant Electric Sweeper

● You'll like the quiet dependability of this new battery-powered TENNANT "80-E" Sweeper! It's exclusively "aisle-designed" to clean aisles up to 8 1/2 ft. wide in one round trip. And in open areas it easily sweeps more than 90,000 sq. ft. per hour.

Sweeps full shift on a single battery charge under normal operating conditions.

WRITE TODAY for illustrated bulletin!

- Sweeps 42" path with main brush (53" with sidebrush).
- Sweeps clean at all speeds. Has dual 24 v motors—one for travel, one for brush-vacuum.
- Efficient vacuum, 4200 sq. in. filter assure CLEAN sweeping.
- Economical to operate and maintain, especially under dusty sweeping conditions.
- 12 cu. ft. hopper; dumps hydraulically in 10 seconds.

TENNANT Industry's Most Widely Used POWER SWEEPERS
G. H. Tennant Company • 715C N. Lilac Drive • Minneapolis 22, Minnesota
▲ For more details circle NED-110 C on enclosed inquiry slip ▲

FAIL-PROOF PROTECTION AGAINST TRAMP IRON
with STEARNS INDOX V* permanent magnet pulleys

*Amazing oriented ceramic magnet material used exclusively by Stearns. Extremely high energy product — light in weight — low in cost.

Job-proved in hundreds of conveyor applications

Equals expensive electromagnetic types in performance, yet costs less than ordinary permanent pulleys.

Available in standard widths and diameters of from 12 to 48 inches to handle the deepest burdens.

Call your local Stearns representative or write for Bulletin 1021L.

STEARNS MAGNETIC PRODUCTS
DIVISION OF INDIANA GENERAL CORPORATION
635 South 28th Street • Milwaukee 46, Wisconsin
Profit with Stearns—First with Ceramic Magnet Separators for Industry
▲ For more details circle NED-111 C on enclosed inquiry slip ▲

FAIL-PROOF PROTECTION AGAINST TRAMP IRON
with STEARNS INDOX V* permanent grate magnets

*Amazing oriented ceramic magnet material used exclusively by Stearns. Extremely high energy product — light in weight — low in cost.

*Mill-Mutual Approved

Job-proved in hundreds of process industries

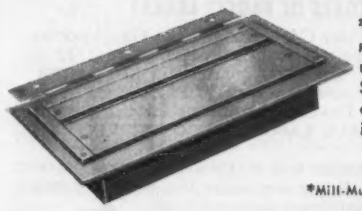
Can be installed in any hopper or floor opening, chute or duct. Delivers up to 40 percent more protective surface than ordinary grate magnets.

Available in standard rectangular sizes ranging from 3x6 inches to 35x36 inches in both wing and drawer types — single or double bank. Inquire about circular or irregular shapes.

Call your local Stearns representative, or write for Bulletin 1072L.

STEARNS MAGNETIC PRODUCTS
DIVISION OF INDIANA GENERAL CORPORATION
635 South 28th Street • Milwaukee 46, Wisconsin
Profit with Stearns—First with Ceramic Magnet Separators for Industry
▲ For more details circle NED-115 C on enclosed inquiry slip ▲

FAIL-PROOF PROTECTION AGAINST TRAMP IRON
with STEARNS INDOX V* permanent plate magnets



*Amazing oriented ceramic magnet material used exclusively by Stearns. Extremely high energy product — light in weight — low in cost.

*Mill-Mutual Approved

Job-proved in hundreds of process industries

If your process involves handling flowing material in chutes, spouts, ducts, or on conveyors, check the Stearns INDOX V plate magnet before you buy. Delivers the greatest protection, size for size, yet costs up to 20 percent less than ordinary plate magnets.

Available in standard sizes and strengths from 4 to 48 inches.

Call your local Stearns representative, or write for Bulletin 1074L.

STEARNS MAGNETIC PRODUCTS
DIVISION OF INDIANA GENERAL CORPORATION
635 South 28th Street • Milwaukee 46, Wisconsin
Profit with Stearns—First with Ceramic Magnet Separators for Industry
▲ For more details circle NED-118 C on enclosed inquiry slip ▲

In Rockwood UNIONS

the big hardness differential in seats makes a big difference *in the entire UNION*

In Rockwood Union #603 both seats are corrosion-resistant AISI molychrome steel, forged in place and double-locked under terrific pressures. The male seat is specially heat treated to make it 150 Brinell harder than the female seat.

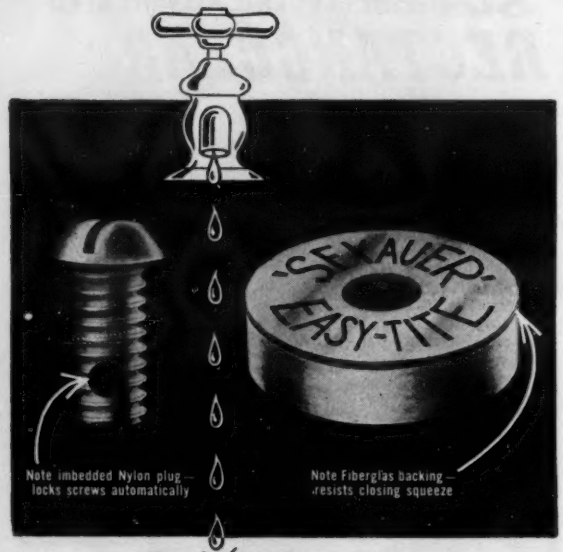
No other union has this hardness differential, which eliminates galling in make-up and assures long, trouble-free service life.

Other big differences in Rockwood Unions that mean greater advantages include: exclusive cold forging, for completely interchangeable parts and higher resistance to sever conditions . . . balanced design, for uniform strength throughout each Union . . . color-coding, for easy identification of types . . . "Rockwoodizing" with a special coating, for protecting all surfaces against corrosion.

Rockwood Unions are tested and listed by Underwriters' Laboratories, Inc. Send for complete facts.

ROCKWOOD SPRINKLER COMPANY
A Division of The Gamewell Company
969 Harlow Street, Worcester 5, Mass.

▲ For more details circle NED-120 C on enclosed inquiry slip ▲



New Way to Stop Faucet Leaks!

★ 9-in-10 washers are fastened with TOO LONG or SHORT SCREWS thus loosen and destroy themselves. Leaks quickly follow!

34 YEARS OF RESEARCH REVEALS NEW SOLUTION

★ New, patented 'Sexauer' SELF-LOCK screws have imbedded expanding NYLON PLUG. They lock at required depth AUTOMATICALLY, hold washers firmly! Made of MONEL, they are rustproof, non-corroding. Heads can't twist off. Screw slots can't distort.

★ NEW, improved 'SEXAUER' EASY-TITE faucet washers are made of super-tough, pliable du Pont compound (not rubber or fibre). Reinforced with a vulcanized layer of Fiberglas, they resist distortion and splitting from shut-off grind and squeeze.

★ Faucet leaks repaired with 'Sexauer' EASY-TITE faucet washers and SELF-LOCK screws outlast ordinary repairs "6-to-1"!

HIDDEN COSTS OF FAUCET LEAKS!

Hackensack, N. J. Water Co. and American Gas Association figures prove stopping just ONE PIN-HOLE SIZE (1/32") LEAK saves you 8,000 gal. water quarterly. A HOT WATER FAUCET LEAK repair saves you over $7.58 QUARTERLY in fuel and water bills. Fewer leaks also produce important savings on MATERIALS, LABOR and COSTLY FIXTURE REPLACEMENTS!

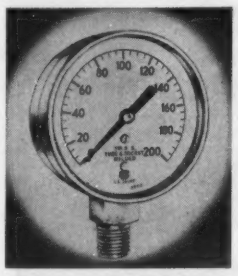
A 'Sexauer' Technician will make available our NEW Catalog, Edition "J", listing our entire line of over 3,000 TRIPLE-WEAR plumbing repair parts and tools. He will survey your fixtures, determine the repair parts needed and establish an efficient stock arrangement and control to prevent costly overstocking or shortages. You get this service without obligation. *Act now!*

J. A. Sexauer Mfg. Co., Inc., Dept. AU-30
2503-05 Third Ave., New York 51, N.Y.
Please send me a copy of your NEW Catalog "J"
Name_____ Title_____
Organization_____
Bus. Address_____
City_____ Zone_____ State_____

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

▲ For more details circle NED-121 C on enclosed inquiry slip ▲

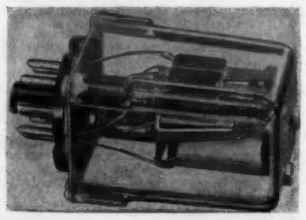
PRESSURE GAGES
all components are stainless steel



Ranges up to 5000 psi and dial sizes of 2, 2½, and 3 in. are available in a line of drawn case stainless steel pressure gages. Gages withstand corrosive atmosphere and media and meet ASA Grade B specifications. Accuracy is 2 per cent at the middle, or working half of the scale, and 3 per cent for the remainder. Bourdon tube, movement, welded socket, case, and ring are Type 316 stainless steel. • **American Machine & Metals, Inc.,** United States Gauge Div., Sellersville, Pa.

▲ For more details circle NED-122 C on enclosed inquiry slip ▲

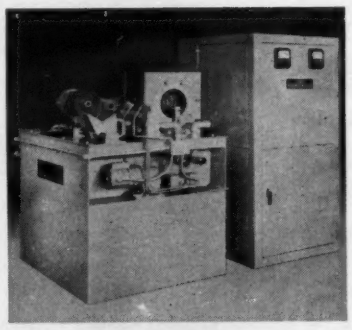
MINIATURE PLUG-IN RELAY
has 8 or 12-pin octal style plug



Operating visibility is combined with protection from dust, moisture, and tampering by the transparent plastic cover of this miniature Class 33 plug-in relay. Impact resistant styrene cover also insulates relay from other components. It is furnished for direct current operation with contact combinations to three-pole double-throw. Octal style 8 to 12-pin plug is standard. • **Magnecraft Electric Co.,** 3350K W. Grand Ave., Chicago 51, Ill.

▲ For more details circle NED-123 C on enclosed inquiry slip ▲

INDUCTION HEATER
semiautomatic, low frequency unit



Automatic indexing of parts to heating coil and quench, then returning to manual unload - reload position, are performed by this semiautomatic, low frequency induction heater. Quenching of one part while another is heating provides continuous production. Machine heats rollers and wheels with diameters from 6 to 14 in. with practically no scale or decarburization. Residual stresses are minimized without danger of hardening the bore or hub sections which may be subsequently machined. Power source is a direct line 60-cycle or Multiductor 180-cycle static frequency converter. • **Ajax Magnethermic Corp.,** 3390 Simon Rd., Youngstown, Ohio.

▲ For more details circle NED-124 C on enclosed inquiry slip ▲

Sweep it, hose it or mop it—A. W. Super Diamond rolled steel floor plate has no pockets to hold dirt or water. Shear, form, weld and match this plate wherever necessary.

Super Diamond wears indefinitely, with no chipping, cracking or splintering. Feet get traction from *every* direction, even when plates are wet.

Readily available from warehouses. For safety . . . easy installation . . . long wear . . . specify A. W. Super Diamond. Write for Bulletin SD-S11.

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.
Also manufacturer of the world's only abrasive rolled steel floor plate—A. W. ALGRIP

▲ For more details circle NED-125 C on enclosed inquiry slip ▲

871B

Improved FEL-PRO C5-A "HI-TEMP" ANTI-SEIZE THREAD COMPOUND

delivers MORE dollar value at same LOW COST!

All These New Improvements—
- NEW • Lower breaking and running torque
- NEW • Non-settling, non-hardening, homogenized composition
- NEW • Can be used in below freezing weather
- NEW • Increased lubricating and sealing qualities
- NEW • Prevents rust and corrosion

Now in tubes and cans

FREE TEST SAMPLE PROVES HOW!

You'll save countless man hours and avoid costly replacement of broken studs, bolts, etc., with the protective cushioning action provided by the colloidal copper composition of C5-A. Improved C5-A Lubricates and Seals for fast, easy application and removal. Gives same protective performance even after high-pressure, high-temperature use, up to 1800° F. Can be used on all metals and plastics.

- ✓ Ends seizing and galling even up to 1800° F.
- ✓ Reduces wrench torque
- ✓ Stops needless stud breakage
- ✓ Permits repeated re-use
- ✓ Speeds assembly and disassembly
- ✓ Prevents galling of stainless steel

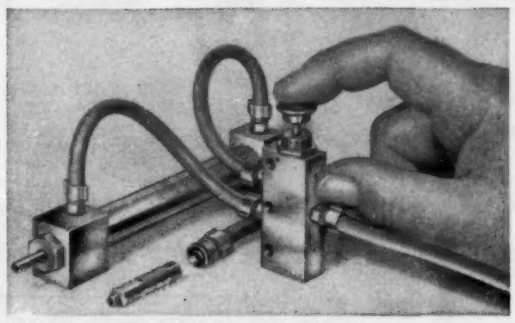
TRY C5-A NOW . . .

Manufacturers, refiners, and power producers find C5-A ideal for boilers, face plate studs, etc. Write for your free test sample today!

FELT PRODUCTS MFG. CO.
Dept. 68, 7450 N. McCormick Blvd., Skokie, Illinois

▲ For more details circle NED-126 C on enclosed inquiry slip ▲

NEW! MORE Powerful 9/16" MINIATURE AIR CYLINDERS • 4-WAY AIR VALVES • QUICK CONNECTS



NEW more powerful 9/16" bore spring return and double acting MINIATURE Air Cylinders to complement our widely used 3/8" bore cylinders. NEW 4-way Air Valve, Quick Connects, A.C. and D.C. Valve Operating Solenoids. NEW MINIATURE Flow Control, Needle and Check Valves, fittings, mountings and accessories to improve your automatic production and tooling devices or new end products where savings in cost, weight or space are MUSTS. Made for MILLIONS of cycles of trouble-free operation. Attractively priced.

Write for NEW Bulletin No. 459

***Clippard* INSTRUMENT LABORATORY, INC.**
7390 Colerain Rd., Cincinnati 39, O. • Phone: JA 1-4261
Manufacturers of R. F. Coils, Electronic Equipment, Miniature Pneumatic Devices

▲ For more details circle NED-127 C on enclosed inquiry slip ▲

LARGE WORK SPACE Bench Oven 3' x 3' x 3'

MODEL 333

Another
GRIEVE - HENDRY STANDARD

Well constructed, efficient Bench Oven with Large Work Space. Especially adaptable to production line work on large units that require heat processing. Work space 36" x 36" x 36". Temperature range to 350° F. 1250 CFM forced air circulation. Stand available. Construction changes to suit needs. No engineering charges. Write for bulletin 2-157.

Quick Quotations Prompt Delivery Reasonable Prices on Ovens Built to Specifications
OTHER STANDARD MODELS — TO 1000° F—
$121.50 AND UP

Specialists in Heat Process Equipment

GRIEVE-HENDRY CO.
1353 N. Elston Ave., Chicago 22, Ill.

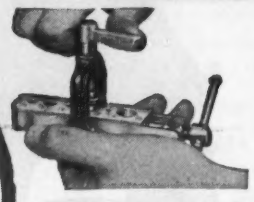
▲ For more details circle NED-128 C on enclosed inquiry slip ▲

Imperial HI-DUTY TUBE CUTTER
Features free-wheeling ball-bearing action. Roller-type with flare cut-off groove. Retractable reamer. Includes spare cutting wheel carried in recess under reamer. No. 274-FA for ⅛ to 1⅛" O. D. tubing. Each $4.15. Other models for sizes up to 2¼" O.D.

IMPERIAL Tubing Tools

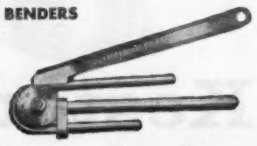
first choice in service tool boxes!

Replace worn tools now and profit from the difference better design makes!



ROL-AIR FLARING TOOL
Rolls flares in the air. Can't mar tubing. No. 500-F (45°) flares and burnishes 3/16, ¼, 5/16, ⅜, ½, ⅝" O.D. tubing. Each . . . $9.95. No. 507-F (37°) flares and burnishes 3/16, ¼, 5/16, ⅜, ½, ⅝" O.D. tubing. Each . . . $13.75.
Other models for sizes up to 2" O.D.

"BLUE DOT" BENDERS
Bend hard or soft tubing — form neat, accurate bends to a short radius — any angle up to 180°. Position anywhere on tubing. No. 364-FH shown. Individual benders for 3/16, ¼, 5/16, ⅜, ½, ⅝, ¾, ⅞" O.D. tubing. Also combination benders for ¼ to ⅞" O.D. tubing. Plus gear-type benders.



Emblem of Quality

Order from your Wholesaler TODAY.

IMPERIAL THE IMPERIAL BRASS MFG. CO. 6300 W. Howard St., Chicago 48, Ill.
In Canada: 18 Hook Ave., Toronto, Ontario
FITTINGS • VALVES • TOOLS for Cutting • Flaring • Bending • Swaging • Tube Closure

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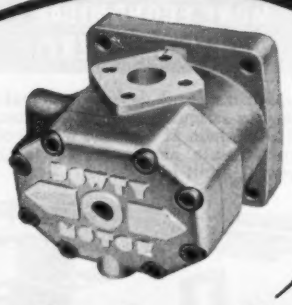


Hydraulic Gear Motors

- Unique pressure balanced design developed by Dowty in England gives overall efficiences to 80%
- Minimum starting torque equals 65% of running torque
- Six models, outputs 1 to 25 HP, speeds to 3000 RPM
- Motors reversible . . . may be operated in series
- Carry overhung loads

WRITE FOR DATA

Berry HYDRAULICS
A DIVISION OF THE OLIVER TYRONE CORPORATION

General Sales Office: Oliver Building, Pittsburgh 22, Pa.

Southern Sales Office and Plant: Corinth 1, Miss.

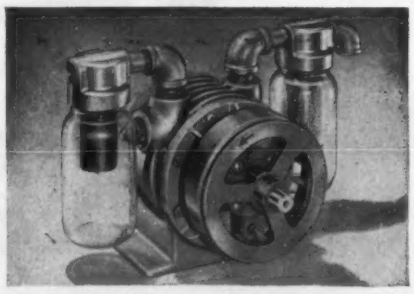
REPRESENTATIVES IN PRINCIPAL CITIES

▲ For more details circle NED-130 C on enclosed inquiry slip ▲

ROTARY AIR GAST PRODUCTS

Runs without oil —

Model 3040 Oil-less Air Pump. Vac. to 20", pressure to 10 p.s.i. To 24 c.f.m., ¾ to 1½ h.p.



Oil-free air blast with carbon-vane
GAST ROTARY AIR PUMPS

Other Oil-less Models

Built in six smaller sizes, some with integral motors — 1/12 to ⅓ h.p.

See Catalog in Sweet's Design File

Need compressed air that's *absolutely free* of oil mist? A Gast Oil-less Air Pump may be your answer! Air flow *can't* contain oil vapor, because no oil is used.

You also eliminate lubrication problems when vacuum or pressure pump is mounted in a hard-to-service location.

Four carbon vanes lubricate themselves. Ball bearings are grease-sealed for life and separated from pump chamber by a ventilated space. Built in 7 models.

Write for Oil-less Bulletins 152A and VP-356.
GAST MANUFACTURING CORP., P.O. Box 117-R Benton Harbor, Michigan.

GAST ROTARY
- AIR MOTORS TO 7 H.P.
- COMPRESSORS TO 30 P.S.I.
- VACUUM PUMPS TO 28 IN.

"Air may be your answer!"

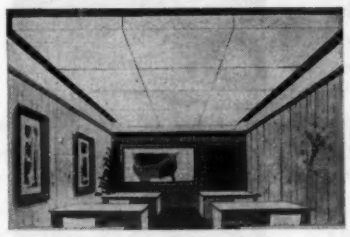
▲ For more details circle NED-131 C on enclosed inquiry slip ▲

ELECTRONIC COUNTER
reads in any physical variable

Modular Model 720 counter with Nixie readout will read directly in cycles per seconds, revolutions per minute, or any physical variable convertible to proportional frequency. Number reached during a 1/10, 1, or 10-sec interval is held for an adjustable display time, or indefinitely. The 115-v 50/60 cycle unit meets OEM electronic counter requirements and has frequency ranges of 0 to 120,000 pulses per second and 1 to 120,000 cps. Options include three to six decades, four time base modules, remote readout indicator (to 100 ft), a 10-mv sensitivity preamplifier, photocell input, accessory power output, and external reset. • **Erie Resistor Corp.**, Erie-Pacific Div., 12932 S. Weber Way, Hawthorne, Calif.

▲ For more details circle NED-132 C on enclosed inquiry slip ▲

CEILING OF LIGHT
gives 200 to 450 ft-c illumination

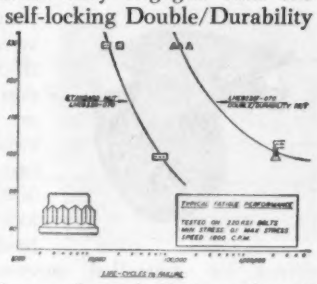


Glare-free, direct-indirect illumination of 200 to 450 ft-c is provided at working levels by Power-LITE pendent type ceiling light fixtures. Using high lumen output 15,000 ma lamps, the modular fixtures are joined end-to-end or side-by-side in any geometric pattern to form a "floating" ceiling of light. • **Metalcraft Products Co.**, 6225 State Rd., Philadelphia 35, Pa.

▲ For more details circle NED-133 C on enclosed inquiry slip ▲

SELF-LOCKING NUTS
increase fatigue life of bolts

Tests showing that most bolt-nut fatigue failures occur at the first bolt thread fully engaged with the nut led to design of the self-locking Double/Durability nut with Equa-Stress thread form. It redistributes the concentrated stress loading to all of the nut threads. These self-locking nuts are interchangeable with other standard nuts and provide an average endurance life of four and one-half times that of standard nuts. Use of fewer bolts and nuts or smaller sizes to carry a determined load is now possible. Graph shows typical fatigue performance of conventional and Double/Durability nuts. • **Elastic Stop Nut Corp. of America**, 2330 Vauxhall Rd., Union, N. J.



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MAUSER ELECTRIC GAGES

- RAPID INSPECTION
- LOW INITIAL COST
- NO MAINTENANCE OR INSTALLATION COST

SIGNAL LIGHTS REPORT ACCURATELY WITHIN 20 MILLIONTHS OF AN INCH OVER AND UNDERSIZE AS WELL AS CORRECT SIZE BY FLASHING OF GREEN, RED OR YELLOW LIGHT.

Cat. #6501 — Head only	$60
Cat. #6551 — Signal box	55
Cat. #6131F – Stand	29.75
Cat. #6201 — Stand and Signal box (Self contained unit)	175
Cat. #650 — Not shown — Dial indicator for use with #6501	30
Cat. #6502 — Not shown – Coupling to connect #6501 to #650	5

For Complete Information request our 96 Page Catalog — Contact any of our 4 "Coast to Coast" Locations or your nearest Local Distributor.

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PRECISION MEASURING TOOLS AND INSTRUMENTS

WAREHOUSE STOCK, SHOWROOMS & SALES OFFICES AT
NEW YORK: 200 Lafayette Street, New York 12, N. Y.
ST. JAMES: St. James, Minnesota
LOS ANGELES: 3337 West Olympic Blvd., Los Angeles 19, Cal.
CHICAGO: 5045 W. Harrison, Chicago 44, Ill.
When writing to any of the above locations, refer to DEPT H-3

▲ For more details circle NED-135 C on enclosed inquiry slip ▲

Hamilton
SUPER SENSITIVE DRILLING MACHINES

IN ALL DRILLABLE MATERIALS

FOUR STANDARD MODELS MANY VARIANTS

Write for FREE Information Batch No. D-820

This is the Hamilton Varimatic® Super Sensitive Precision Drilling Machine equipped with "tool-room base" and compound table.

THE HAMILTON TOOL COMPANY
901 HANOVER STREET • HAMILTON • OHIO

▲ For more details circle NED-136 C on enclosed inquiry slip ▲

HERE'S
NEOTHANE

solid answer to your most demanding haulage problems

TAKE A GOOD LOOK—for this Goodyear "solid" is an entirely new kind of tire. Called *Neothane*, it's made to order for the tough, heavily overloaded hauling that leads to premature failure of ordinary tires.

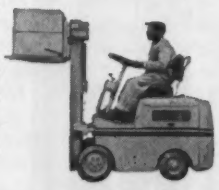
ITEM: it lasts as much as *four times* longer than conventional solid tires.

ITEM: it carries *two to four times* the load capacity of standard solids.

ITEM: it offers better resistance to broken glass, metal chips, sharp stones and other hazards which cause ordinary tires to fail.

ITEM: it won't mark even finely finished floors—saves plant maintenance and cargo damage—assures smoother hauling.

These Xtra-Service, Xtra-Capacity advantages are yours only with *Neothane*—the new Goodyear polyurethane that wears like iron, but has the quiet resilience of rubber.



FOR MORE INFORMATION on this amazing new tire—*and how it can save for you*—write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

INDUSTRIAL TIRES BY
GOODYEAR

More tons are hauled on Goodyear Truck Tires than on any other kind
Neothane—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

▲ For more details circle NED-137 C on enclosed inquiry slip ▲

SEND FOR FREE CATALOG
OF COMPLETE LINE OF
RUSCOE INDUSTRIAL ADHESIVES

RUSCOE Safe-T-Glue

RUSCOE Safe-T-Glue is a quick-setting, strong, water-resistant adhesive for paper, cellophane, wood, fiber, metal, ceramics, cork, leather or cloth. Non-toxic, non-flammable and odorless, Safe-T-Glue is ready for use without mixing or heating. It may be applied by roller, brush or dip. 4 oz., ½ Pts., Pts., Qts., and Gals. are shipped in polyethylene containers.

DISTRIBUTORS OF:
ALUM-O-BOND
RUSCOE EPOXY
SAFE-T-GLUE
"T" FILM (Thermosetting Tape)
And a complete line of INDUSTRIAL CEMENTS

W. J. RUSCOE CO.
475-485 Kenmore Blvd. Akron 1, Ohio

▲ For more details circle NED-146 C on enclosed inquiry slip ▲

CHICAGO® PRESS BRAKES
UNEXCELLED ACCURACY

for sheet metal and plate work

Model 410D, 90-Ton CHICAGO Mechanical Press Brake. Other standard models from 11 to 450 ton capacities.

Model 600H10, 600-Ton CHICAGO Hydraulic Press Brake. Other standard sizes from 300 to 2000 ton capacities.

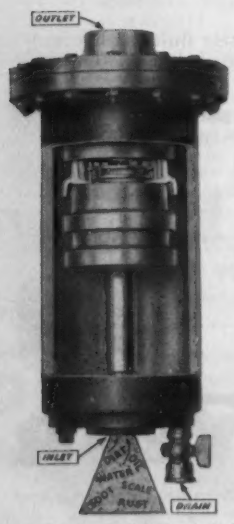
Complete details or recommendations on any press brake work upon request

Press Brakes
Press Brake Dies
Straight-Side-Type Presses
Hand and Power Bending Brakes
Special Forming Machines

DREIS & KRUMP MANUFACTURING CO.
7436 S. Loomis Blvd., Chicago 36, Illinois

▲ For more details circle NED-147 C on enclosed inquiry slip ▲

END AIR LINE MOISTURE PROBLEMS!



get the CLEANEST, DRIEST compressed air!

No more air line freezups with the CMD Textite Separator. *No* moving parts, *no* filters make Textite virtually maintenance-free. Use this proven separator to prevent rust, washing out of lubricants, worn gaskets, scored cylinder walls, clogged nozzles and costly equipment repair. Especially effective for keeping paint and finishing lines dirt and moisture-free.

NO MOVING PARTS . . .
NO FILTERS TO REPLACE!

SEND FOR CATALOG...

Contains complete details, all essential ordering information. Send for your copy today!

CHICAGO MANUFACTURING & DISTRIBUTING CO.
1902 W. 46th St. • Chicago 9, Ill.

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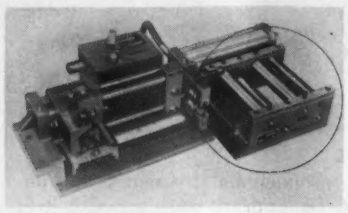
STOCK STRAIGHTENER
used with most automatic feeds



Four hardened and ground straightening rolls of the Economy stock straightener remove the curvature from coil stock, delivering it smooth and flat to the press. The non-powered unit can be used with almost any automatic feed. The 6, 12, and 18-in. sizes offered have maximum capacities in mild steel ranging from 6 x 0.125 in. to 18 x 0.045 in. Photo shows straightener with an air feed. • **Cooper Weymouth, Inc.**, 600 Honeyspot Rd., Stratford, Conn.

▲ For more details circle NED-149 C on enclosed inquiry slip ▲

TOTE PANS
designed for sanitary handling

Stack-n-Nest tote pans made of PolyLewton, a material with glass-like finish, are designed for food processing and other applications demanding sanitation. With no corners or seams, pans are easy to keep clean. They resist corrosion and have no surface pores or crazes where bacteria might form. Pans weigh 3¾ lb, yet will hold up to 50 lb. They are stacked or nested by matching or reversing the end configurations. Full perimeter top rim facilitates sure gripping. • **G. B. Lewis Co.**, Dept. PL, Watertown, Wis.

▲ For more details circle NED-150 C on enclosed inquiry slip ▲

SWIVEL LOCK CASTER
capacity ranges to 3000 lb

Fingertip conversion from swivel to rigid at any position is possible with this positive locking swivel caster. The Multi-Position swivel lock is optional on casters having capacities to 3000 lb. Any number of locking slots can be milled in the yoke at specified positions for controlled movement in any direction. Spring-loaded finger-operated plunger engages in slot. Wheel types include metal, plastic, Moldon rubber, semipneumatic, and polyurethane in diameters to 12 in. and pneumatic rubber tires in 8 to 16-in. diameters. • **Hamilton Caster & Mfg. Co.**, 1633 Dixie Highway, Hamilton, Ohio.

▲ For more details circle NED-151 C on enclosed inquiry slip ▲

IN THE PLANT--
use TIME TAPE for best results!

Available in plain or pre-printed. Here's the time-tested, proven cost-cutter for wire harness numbering, inventory, stock room, radio tube, wiring diagrams, etc. TIME TAPES and LABELS resist temperatures from +250° to −70°! They are not affected by grease, dirt, water or acids.

WRITE ON IT! TYPE ON IT! TIME TAPES and LABELS accept pen, pencil and ballpoint markings. Eliminate guesswork . . . be sure with TIME!

Samples and prices on request!
Write to — Dept. N.S.P.

PROFESSIONAL TAPE CO., INC.
355 Burlington Ave. Riverside, Ill.

TIME LABELS

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Industry votes a solid "YES!"

Only virgin metals, precision manufacture, uniform consistency, rigid inspection . . . these are some of the reasons why KESTER SOLDER today enjoys unanimous acceptance in all kinds of industry. Insist on Kester . . . you'll have the best in Solder!

SEND for free literature and complete information.

Kester Solder COMPANY
4249 Wrightwood Ave., Chicago 39, Illinois
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Over 60 Years' Experience in Solder and Flux Manufacturing

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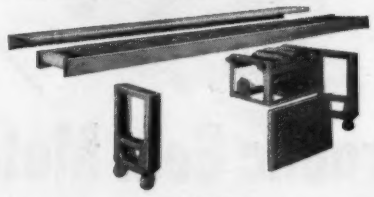
WHAT MAKES ONE CONVEYOR MORE ECONOMICAL THAN ANOTHER?

Standardized unit design that makes it easy to assemble your own systems and alter them at low cost when your requirements change. This is the *original* Unibilt idea.



UNITABLE®
Build-It-Yourself Construction

WHAT MAKES ONE CONVEYOR MORE DEPENDABLE THAN ANOTHER?

Highest quality materials and components designed and selected to *work together*. The staff at Conveyor Specialty Company has over 35 years experience in engineering conveyors and systems.

UNIBILT®
Inclined Belt Conveyor

WHAT MAKES ONE CONVEYOR SYSTEM MORE EFFICIENT THAN ANOTHER?

Pre-engineered design, proven in thousands of installations over years of operation. Unibilt conveyors are standard in a wide range of widths and lengths as required.

UNIBILT®
Conveyor system

Write for Unibilt Bulletin
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Distributors in Principal Cities
40 Newport Avenue, North Quincy, Mass.

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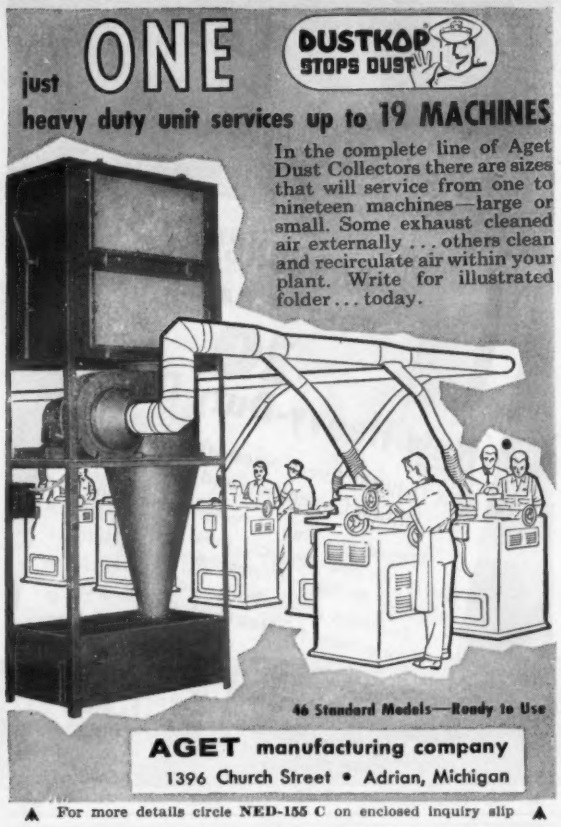
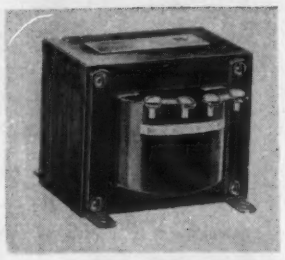


▲ For more details circle NED-155 C on enclosed inquiry slip ▲

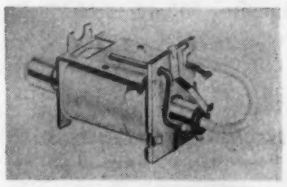
CONTROL TRANSFORMERS in 50-va to 5-kva sizes



Standard sizes and voltages from 50 va to 5 kva are available in line of Red H control transformers. They are supplied with screw type terminals made of heavy nickel plated brass, to which is riveted a heavy section of rag paper. Both core and coil are varnish dipped and baked for complete protection. Connecting links are supplied for series-parallel connections on primary. • **Hindle Transformer Co.**, Woods Church Road, Flemington, N. J.

▲ For more details circle NED-158 C on enclosed inquiry slip ▲

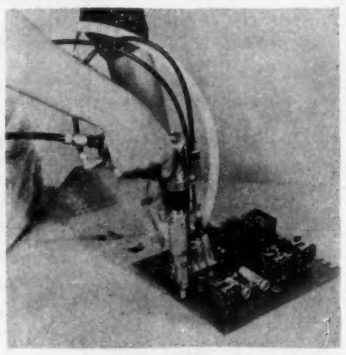
ANNUNCIATOR UNIT includes a pilot lamp



When a remote button is pushed, the solenoid coil of the RX-1459 annunciator unit pulls the plunger forward, where it remains until reset manually. The pilot light on the plunger may be energized in either the forward or retarded position; it is de-energized at the remote point by a small switch. Visual annunciator unit is suited for call boards, intercommunication systems, alarm systems, and for use as a liquid-level indicator. • **Wheelock Signals, Inc.**, Branchport Road, Long Branch, N. J.

▲ For more details circle NED-159 C on enclosed inquiry slip ▲

AIR-POWERED SCREWDRIVER drives 30-60 screws per min



Air-driven Powasert Model B screwdriver which can reach into tight spots will automatically feed, position, and drive 30 to 60 screws per minute at torques of 3.6 to 6.3 lb-ft. Tool consists of a 4-lb pistol-grip or straight handle gun and a separate feeder-separator that holds 10 lb of screws. Light nose contact on work feeds and drives each screw. Driver handles all wood, sheet metal, and machine screws from ½ to 1¾ in. in 6 through 10 gages. As many as 26 different screws can be fed and driven without change of fitting. Tool is supplied with air gage, automatic air coupling, and necessary gages and hose. • **United Shoe Machinery Corp.**, 140 Federal St., Boston 7, Mass.

▲ For more details circle NED-160 C on enclosed inquiry slip ▲

For Complete Information Phone BAker 5-8201 or write:

PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER, NEW YORK

▲ For more details circle NED-162 C on enclosed inquiry slip ▲

Stronger, More Durable Better Fitting Eye Protection!

Withstands climatic changes better . . . outlasts other materials. For safety directors who want the utmost in durability that only metal gives. AO also strongly recommends for fitting. For complete details of bridge, lenses, side shields, temples, frame and other AO-Safety-Engineered features write for illustrated brochure S-8582. Or call your nearest AO Safety Products Representative.

Be Safe for Sure . . . With AO SURE-GUARD Glasses

▲ For more details circle NED-156 C on enclosed inquiry slip ▲

The ROTARY UNION*

the free-floating, long-lasting rotating seal

The ROTARY UNION'S free-floating action minimizes strain and wear on sealing surfaces. Ball bearing construction permits continuous high speed operation. Patented mechanical seal automatically adjusts to fluctuations in line pressures. The result is a trouble-free unit which requires no mechanical maintenance and outlasts all others.

The ROTARY UNION saves you money wherever revolving equipment is heated or cooled. Pipe sizes ¼" through 5". Write for Bulletin 700D

*Trade Name - Patented

"WHERE Good Connections COUNT"®
PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N.C.
Baltimore—Buffalo—Camden, N. J.—Chicago—Cleveland—Los Angeles
New York—Providence—Montreal—Toronto

▲ For more details circle NED-163 C on enclosed inquiry slip ▲

NEW RE-ROOFING METHOD cuts costs as much as 55%

A simplified process which saves up to 55% of the installation costs for new roofs is now available from The Monroe Company. Known as the Monroe VULCA-DEK system, this method eliminates the expense of removing old roofs and does away with heating of roof coating, hot mop applications and use of gravel. Fire danger is completely eliminated.

The key to the VULCA-DEK process is the use of Monroe products—(1) Hold-Tite, an extremely adhesive sealing cement which "vulcanizes", (2) heavy-duty 53 lb. roofing felt, and (3) Siliconed Rufferseal.

Monroe Asbestolite can be used in the VULCA-DEK system instead of Rufferseal. It contains aluminum flakes and when applied produces a brilliant, attractive aluminum roof.

Monroe VULCA-DEK roofing specifications are adaptable to construction of both single-ply and 2-ply built-up roofs. For further information, write **The Monroe Company, Inc.**, 10702 Quebec Avenue, Cleveland 6, Ohio.

▲ For more details circle NED-157 C on enclosed inquiry slip ▲

ELIMINATE DAMAGE FROM CHUCK-HOLES the only permanent patching material that repairs ruts and chuck-holes instantly, in any weather

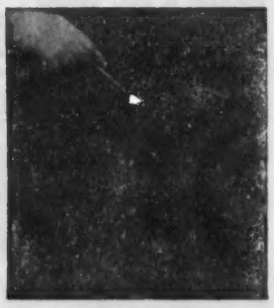
You can keep your loading areas in top condition year 'round without interrupting traffic with ZOR-X, the new permanent patching material. ZOR-X can be used in wet or dry weather, winter or summer. No special equipment is required—merely shovel ZOR-X into the chuck-hole or rut. No tack or prime coat is needed. Compact with tamper, roller, even the back of a shovel and your truck wheels finish the job.

With ZOR-X it is possible to repair chuck-holes before they become so big a complete resurfacing job is necessary. If it's snowing, sweep out the snow . . . if it's full of water, remove and fill with ZOR-X. And you can store ZOR-X indefinitely. Keep it on hand and eliminate costly resurfacing jobs that hold up operations. Write for circular describing ZOR-X and its application. **The Monroe Co., Inc.**, 10702 Quebec Ave., Cleveland 6, Ohio. *Advt.*

▲ For more details circle NED-161 C on enclosed inquiry slip ▲

REPAIR FLOOR CRACKS with new plastic material

Before



After

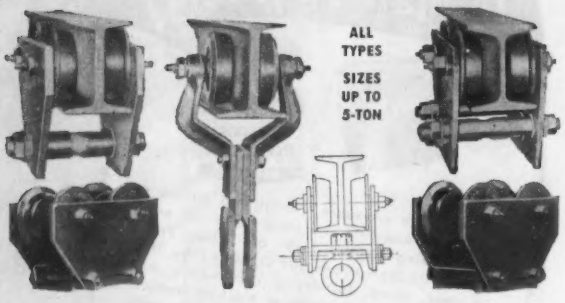
A new plastic material, formulated for the specific purpose of repairing floor cracks and preventing surface deterioration, is announced by The Monroe Company, Inc., Cleveland. Known as "Jiffy Floor", it is a fine granular, ready-to-use plastic product that can be applied without interfering with production or traffic. It readily fills hairline cracks, shallow holes, spalled floors or expansion joints. Immediately after application, it will withstand heaviest loads.

Jiffy Floor contains no asphalt, cement, sand or gravel. It will not crack, crumble or curl . . . is not affected by temperature changes . . . can be applied indoors or out.

Jiffy Floor is waterproof, dustless, skid-proof and noiseless. Available in 5-10-30 and 55-gallon drums, ready for easy use. For further information, write **The Monroe Company, Inc.**, 10702 Quebec Avenue, Cleveland 6, Ohio. *Advt.*

▲ For more details circle NED-164 C on enclosed inquiry slip ▲

PLAIN — FLANGED — GEARED — BALL or ROLLER BEARING
CONVEYOR WHEELS — GUIDE WHEELS — ROLLERS
MACHINED CROWN — TAPER OR FLAT WHEEL TREADS
SOLID — THROUGH OR REMOVABLE AXLES



AUTOMATION EQUIPMENT
Quality Products — Right on Every Beam
Close Headroom — Adjustable for All Beams
PLAIN — GEARED — SELF ALIGNING — RIGID — SWIVEL
HOIST TROLLEYS — HOSE AND CABLE TROLLEYS
CRANEWAY END TRUCKS — CHAIN CONVEYOR ASSEMBLIES
Standard or Special Beam—Tram or Monorail
NEW INSTALLATION—REPLACEMENT
Standard and Special Products by Grey Hub Are Used by Leading Manufacturers of Material Handling Equipment
GREY HUB TROLLEY WHEEL COMPANY
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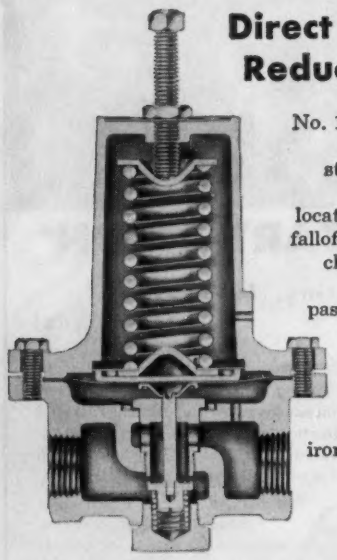
17265 GABLE AVENUE DETROIT 12, MICHIGAN
▲ For more details circle NED-165 C on enclosed inquiry slip ▲

NEW!
Direct Operated Reducing Valve

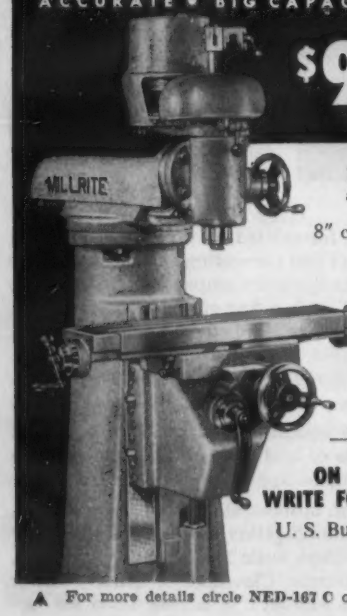


No. 17-1 Direct Operated Reducing Valve, for steam service, features accurately sized and located ports to minimize falloff; isolated diaphragm chamber for maximum stability; large body passages; lapped seating surfaces for tight shutoff. (No. 17-22 with soft seats for air service, also available.) Made of iron in sizes ½", ¾", 1". Reduced pressure ranges 2-12; 8-50; 25-150 psi.

Ask Your Mason-Neilan Industrial Distributor.
He is ready to serve you and to ship promptly from stock. Ask for catalog or write direct.

MASON-NEILAN
Division of Worthington Corporation
69 NAHATAN ST., NORWOOD, MASS.
▲ For more details circle NED-166 C on enclosed inquiry slip ▲

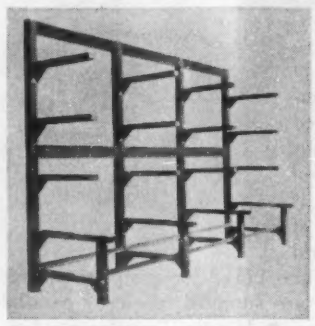
new
U.S. MILLRITE
VERTICAL MILL
ACCURATE • BIG CAPACITY • RUGGED
$990*



16" table feed, 12" ram adjustment, 15" vertical knee movement, 8" crossfeed, 4" quill travel. Hard chromed quill, hand scraped and precision ground ways, accurately finished to accepted machine tool standards. Weighs 1100 pounds. Built in Cincinnati to sell for just $990.00 —less ¾ H.P. electricals.*

ON DISPLAY NEAR YOU
WRITE FOR NEAREST DEALER
U. S. Burke Machine Tool Co.
2 Brotherton Rd.
Cincinnati 27, Ohio
▲ For more details circle NED-167 C on enclosed inquiry slip ▲

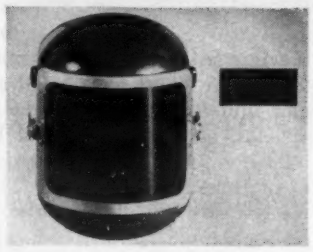
HORIZONTAL STORAGE RACK
holds long, heavy shop materials



Built of heavy-duty ⅛ and ¼-in. box channel steel, this Hallowell horizontal storage rack holds lumber, pipe, and other heavy shop materials with maximum visibility of its five levels. Basic, free-standing model measures 12 ft 4 in. wide by 8 ft 4 in. high by 3 ft 4 in. deep, and consists of four upright assemblies, six stringers, and six tie bars. Support bars are 3½ in. wide for flat, smooth surface support. Additional 4-ft wide sections can be attached as storage requirements grow. Racks are phosphate coated and finished with green baked-on enamel. They are shipped knocked-down. • **Standard Pressed Steel Co.**, Columbia-Hallowell Div., Box 581, Jenkintown, Pa.

▲ For more details circle NED-168 C on enclosed inquiry slip ▲

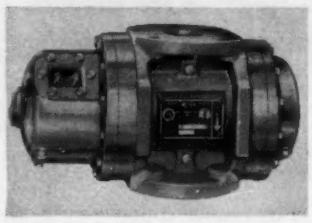
ARC WELDING SHIELD
filters harmful rays, is unbreakable



Made in standard 2 x 4½-in. lens and 7 x 11-in. panoramic window sizes, Plasti-Weld filters remove harmful ultraviolet and infrared rays to the same standards as glass in Federal specs. Light in weight; resistant to shock, heat, and breakage; and equally clear as glass, they will fit standard helmets. Sample 2 x 4½-in. filter is available for $1.65. • **Chicago Eye Shield Co.**, 2727 W. Roscoe St., Chicago 18, Ill.

▲ For more details circle NED-169 C on enclosed inquiry slip ▲

ROTARY GAS METER
line-mounted unit for 125 psi



Straight - through gas flow is provided by the 3M125 rotary gas meter, a flange mounted unit for installation in horizontal or vertical gas lines without need for additional support. Flow ranges to 3000 cfh at pressures to 125 psi. Constructed of cast iron and sealed against gas leakage, it weighs less than 55 lb. Rotating elements are supported in ball bearings. Volume register or counter reads directly in cubic feet of displaced gas. • **Dresser Industries Inc.**, Roots-Connersville Blower Div., 900 W. Mount St., Connersville, Ind.

▲ For more details circle NED-170 C on enclosed inquiry slip ▲

Fluffy powders are difficult to handle and convey. Their light weight offers little friction for conveying.

The Cleveland Vibrator Company has developed a feeder that will successfully convey many of these powders. The feeder is either tubular or square in shape, with the interior divided into compartments. These small sections give greater friction surface for transporting the powder.

Conveying is accomplished by vibration, which is initiated by a pneumatically operated, vibrator drive mechanism. The feeder itself is mounted on, or suspended from flexible supports, either rubber or springs. The supports do not supplement the vibrating action, but only insulate the surrounding structure from vibration. As a result, tuning the feeder is unnecessary.

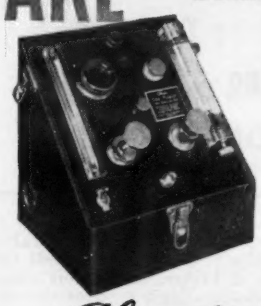
The Cleveland Feeder requires no special mounting and is free from bearings, couplings, and pillow blocks. The only moving part is the air piston in the drive mechanism. Installation costs are slashed and operating costs are considerably lower.

Write for free literature today. A complete description of your requirements will bring a prompt quotation.

THE CLEVELAND VIBRATOR CO.
3K-2744 Clinton Avenue - Cleveland 13, Ohio
▲ For more details circle NED-171 C on enclosed inquiry slip ▲

▲ For more details circle NED-172 C on enclosed inquiry slip ▲

TAKE GUESSWORK OUT of DEW POINT READING with



Alnor® DEWPOINTER

Any shop man can quickly...accurately...read dew points with the Dewpointer. It is the only instrument that lets you see the fog in a sealed chamber under controlled conditions. Compare this fast, positive method with attempts made to tell exactly when fog forms on a mirrored surface. Completely self-contained, requires no external coolant or auxiliary apparatus ...operates on enclosed battery or AC. Available in three ranges for dew points between −20° F. and room temperature, from −80° to 0° F. and −80° F. to room temperature.

Send for Dewpointer bulletin. Tear out this ad and send on your letterhead to: Illinois Testing Laboratories, Inc., Room 529 420 N. LaSalle St., Chicago 10, Ill.

Alnor
PRECISION INSTRUMENTS FOR EVERY INDUSTRY
▲ For more details circle NED-173 C on enclosed inquiry slip ▲

FREE! New Floor and Carpet Care Manual

This colorful manual will help you solve most any floor and carpet maintenance problem. It contains illustrated, step-by-step instructions on how to clean and maintain 10 different types of the most popular hard and resilient floors. It tells how to shampoo carpets; how to select proper equipment, cleaners, waxes, and finishes; how to treat common floor failures. It also contains suggestions on floor safety, tips on floor and carpet stain removal, and explains how to set up proper job time requirements and use work planning schedules.

Send for your free copy today. It's yours for the asking from the makers of Advance Floor Machines.

ADVANCE
ADVANCE FLOOR MACHINE CO.
120 Industrial Center
Spring Park, Minnesota
▲ For more details circle NED-174 C on enclosed inquiry slip ▲

CABLE MARKING
PREVENTS ERRORS

Safely and Permanently

- MARKS
- BINDS
- COLOR CODES
- INSULATES
- TEMPERATURE RATINGS UP TO 300° C

If you have a cable marking or strapping problem . . . send today for samples and catalogues to . . .

HELLERMANN CORPORATION
701 SENECA ST. • BUFFALO 10, N.Y.

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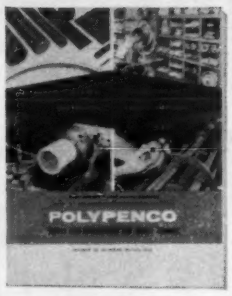
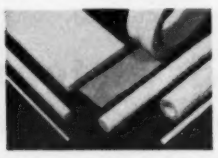
NEW!

22 proven ideas for saving money with wear parts made from POLYPENCO® Nylon and NYLATRON® GS Stock Shapes



Contains 22 different, fully illustrated and described case histories where tough, long-wearing POLYPENCO Nylon and NYLATRON GS* parts actually outwear and outperform metals and other materials, at less cost to both manufacturers and users.



Other valuable information plus handy availability chart for stock sizes of POLYPENCO Nylon and NYLATRON GS rod, tubing, strip, plate, disc, and tubular bar.

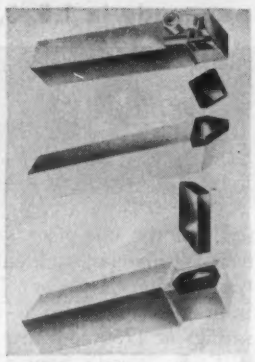
Send for your copy today!

THE POLYMER CORPORATION OF PENNA.
Reading, Pa., U.S.A.
*molybdenum disulphide-filled nylon
(U.S. Patent No. 2,855,377)

POLYPENCO

▲ For more details circle NED-176 C on enclosed inquiry slip ▲

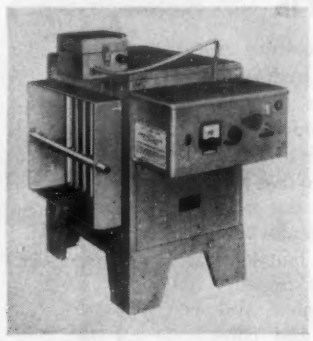
CUTTING TOOLS
blanks, inserts, and holders



Line of cutting tools uses Kennametal exclusively in Besly grade designations. Included are carbide single point tools, blanks, inserts, and holders, and replaceable bits and chip breakers. Stocks are carried throughout the country. • **Besly-Welles Corp.**, South Beloit, Ill.

▲ For more details circle NED-178 C on enclosed inquiry slip ▲

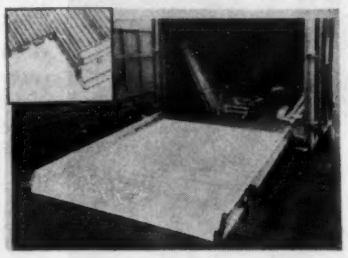
ELECTRONIC AIR CLEANERS
five models added to line



Addition of five new models to a line of electronic air cleaners makes a total of 26 models with horizontal and vertical air flow capacities from 800 to 10,000 cfm. All are rated at 90 per cent efficiency by National Bureau of Standards' dust spot test. Easily installed in ductwork, new models include one in the Universal line, and two each in Tec and Compact lines. All feature 5/16-in. spacing of ionizing-collecting cell plates. • **Electro-air Cleaner Co.**, Dept. Z, Olivia & Sproul Streets, McKees Rocks, Pa.

▲ For more details circle NED-179 C on enclosed inquiry slip ▲

DOCKBOARD & BRIDGE
of high strength magnesium alloy



High strength-to-weight ratio ZK60 magnesium alloy with twice the compression yield strength of standard magnesium alloys is used in Whitelight lightweight dockboards and bridges. Non-skid corrugated floor is made of integrally stiffened interlocking sections. Contoured, replaceable toe sections and high rigid side rails for safe wheel confinement are among features. Units are available with standard and heavy duty curbing and flooring in 3½ to 10-ft lengths and 3 to 6-ft widths. Individual sections are easily joined for use as ramp and dockboard combinations. • **White Metal Rolling & Stamping Corp.**, Whitelight Portable Equipment Div., 443 Fourth Ave., New York 16, N. Y.

▲ For more details circle NED-180 C on enclosed inquiry slip ▲

NEW!...
HANNA-POWR CYLINDERS

FEATURES:

- Exclusive pressure-safe tube seals
- Fast change cartridge gland
- One piece steel heads with welded mountings
- Long lubricated bearings
- Meet J.I.C. standards
- Interchangeable dimensionally

Powrmation Series: For air operation to 250 psi, hydraulic to 1,000 psi. Bores 1½" thru 14"

Powrdraulic Series: For hydraulic operation to 3,000 psi non-shock. Bores 1½" thru 8"

Hanna-Powr Cylinders are available in a variety of mountings, bores and strokes. Engineered for strength and durability, they are precision-built to suit the toughest application requirements—yet their modest cost makes them a practical answer to common and unusual power-motion problems.

Write For New Catalog 1000 →
– it gives details on Hanna-Powr Cylinders and Hanna-Flo Valves

Hanna Engineering Works
HYDRAULIC AND PNEUMATIC EQUIPMENT CYLINDERS VALVES
1759 Elston Avenue • Chicago 22, Illinois

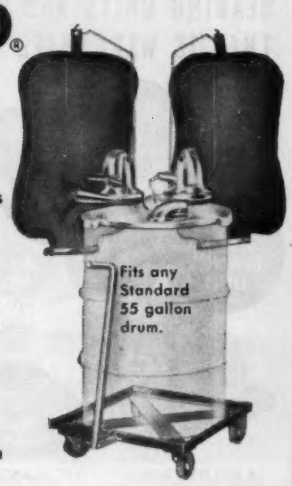
▲ For more details circle NED-181 C on enclosed inquiry slip ▲

NEW Production Tool

(Suction air speeds to 325 miles per hour)

TORNADO® VACUUM

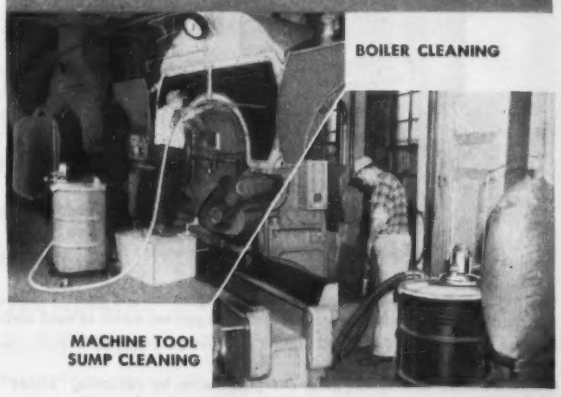
- Cleans inside Heavy Castings
- Removes Assembly Debris in Automotive, Aircraft and Appliance Industry
- Huge volume capacity for Woodworking or reclaiming Welding Flux
- Efficient reclaiming of Precious or Semi-Precious metal machining scrap



Tornado Jumbo Vacuum Cleaners from ¾ H.P. up to 3 H.P.

A new and important cost saving tool for manufacturing. Thousands of Tornado Vacs are working right on the production line today . . . removing debris from large assemblies, collecting valuable scrap metal and other important jobs. When brooms are too slow, and air blowing is too dangerous—Tornado Vacuums save time, labor and material.

And, A Maintenance Tool, Too!



Your Tornado Vacuum also doubles in brass as it cleans boilers to reduce fuel bills by 45%—Cleans machine tool sumps fast (¼ the regular time)—picks up all liquids, dust, dirt or chips.

Write for Bulletin No. 899

BREUER ELECTRIC MFG. CO.
5116 N. Ravenswood Avenue • Chicago 40, Ill.

▲ For more details circle NED-182 C on enclosed inquiry slip ▲

Yale tractor shovels

are setting new performance standards wherever they are used. Compare Yale power against any other in its field. Only Yale gives you a torque converter and fully automatic transmission with 72-hp. 6-cylinder engine. Compare Yale action! 2500-lb. carry capacity bucket. Exclusive 45° bucket tipback for faster loading and minimum spillage. 6 ft. dumping clearance—highest in the field. Compare Yale safety! Safety-curve lifting members never rise alongside the operator. Front and rear working lights for additional security. Compare Yale design! Rugged, simplified, more efficient. Brakes and electrical system sealed. 10-ply tires. Many parts interchangeable with Yale Gas trucks. Compare these features with a demonstration in your own plant. You'll save time and money!

For full information, or a demonstration, call your Yale representative, or send for free brochure #5255A to The Yale & Towne Mfg. Co., Materials Handling Div., Phila., 15, Pa., Dept. YT-4

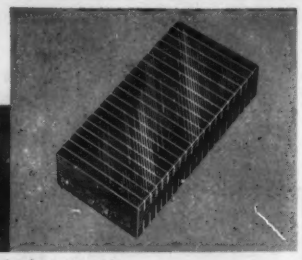
YALE®
INDUSTRIAL LIFT TRUCKS
TRACTOR SHOVELS • HOISTS
YALE & TOWNE

Yale Materials Handling Division, a division of The Yale & Towne Manufacturing Co. **Manufacturing Plants:** Philadelphia, Pa., San Leandro, Calif., Forrest City, Ark. **Products:** Gasoline, Electric, Diesel, LP-Gas Industrial Lift Trucks • Worksavers • Warehousers • Hand Trucks • Industrial Tractor Shovels • Hand, Air, Electric Hoists

▲ For more details circle NED-177 C on enclosed inquiry slip ▲

Get precision that gives precision . . .

Magnetic PARALLELS and V-BLOCKS



PARALLELS . . . ground singly or in pairs

Number	Dimensions	Wt. Each	Price Each	Price Pair
M-1	¾ x 1½ x 3	1¼ lbs.	$11.00	$20.00
M-2	¾ x 1½ x 6	2¼ lbs.	17.00	30.00
M-11	⅞ x 2 x 4	2½ lbs.	17.50	31.00
M-153	1 x 1½ x 3	1½ lbs.	13.00	23.00
M-22	1 x 2 x 2	1½ lbs.	12.00	21.00
M-23	1 x 2 x 3	2 lbs.	15.00	27.00
M-3	1 x 2 x 4	2¾ lbs.	18.00	32.00
M-4	1 x 2 x 6	4 lbs.	19.00	34.00
M-28	1 x 2 x 8	5¾ lbs.	22.00	39.00
M-255	1 x 2½ x 5	3½ lbs.	20.00	36.00
M-34	1 x 3 x 4	3¼ lbs.	20.00	36.00
M-5	1 x 3 x 6	6 lbs.	26.00	46.00
M-38	1 x 3 x 8	7½ lbs.	37.00	66.00
M-312	1 x 3 x 12	12 lbs.	52.00	93.00
M-356	1 x 3½ x 6	6¾ lbs.	32.00	57.00
M-6	1 x 4 x 4	5½ lbs.	22.00	39.00
M-46	1 x 4 x 6	8 lbs.	37.00	66.00
M-48	1 x 4 x 8	9¼ lbs.	45.00	81.00
M-412	1 x 4 x 12	18 lbs.	73.00	131.00
M-510	1 x 5 x 10	18 lbs.	77.00	138.00
M-610	1 x 6 x 10	20 lbs.	79.00	142.00
M-612	1 x 6 x 12	24 lbs.	100.00	180.00
M-7	1 x 8 x 8	22 lbs.	86.00	154.00
M-8	1⅝ x 1⅝ x 4½	3½ lbs.	19.00	34.00
M-9	1¾ x 2 x 3	1½ lbs.	17.00	30.00
M-248	2 x 4 x 8	18 lbs.	86.00	154.00

V-BLOCKS . . . 90° V and 45° from centerline

Size No.	Height, Inches	Width, Inches	Length, Inches	Price Each	Price Pair
MV-1	1¾	2½	2½	$38.00	$68.00
MV-2	1¾	2½	4	58.00	102.00
MV-3	2	6	6	96.00	172.00
MV-4	1¾	2½	6	72.00	129.00

Order now for prompt delivery !

Hanchett MAGNA-LOCK, CORP. BIG RAPIDS, MICHIGAN

▲ For more details circle NED-183 C on enclosed inquiry slip ▲

SEALMASTER® "L" SERIES

A HIGH QUALITY LINE OF MALLEABLE HOUSED BEARING UNITS AND BEARINGS AT A COST THAT IS WARRANTED ON YOUR MACHINE!

- SELF-ALIGNING
- ONE-PIECE MALLEABLE HOUSING
- PERMANENTLY SEALED
- EASY RACE TO SHAFT LOCK

Available in pillow blocks and two or three bolt flange units for flush or recessed mountings. All units in the "L" Series available with the new SEALMASTER contact type seal.

LP PILLOW BLOCK LFT FLANGE UNIT LF FLANGE UNIT

WRITE FOR BULLETIN 1058

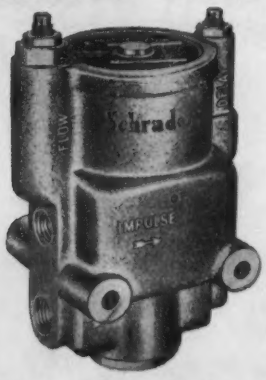
SEALMASTER BEARINGS
A DIVISION OF
STEPHENS-ADAMSON MFG. CO.
12 RIDGEWAY AVENUE
AURORA, ILLINOIS
Plants Located in: Los Angeles, Calif. Clarksdale, Miss • Belleville, Ontario

SEALMASTER® BALL BEARING UNITS

▲ For more details circle NED-184 C on enclosed inquiry slip ▲

NEW!

SCHRADER 3-WAY TIMED DELAYED BLAST VALVE



No. 830
Schrader Delayed Blast Valve

Use it for timed sequencing of cylinder...to provide and control reciprocation of cylinders without cams and with pre-set dwell at each end.

Can be used with air-charged timing chamber to control flow of oil, water, liquids.

Set time before flow starts, after charging valve, by adjusting "Delay" needle valve.

Control time of flow from discharge port by adjusting "Flow" needle valve.

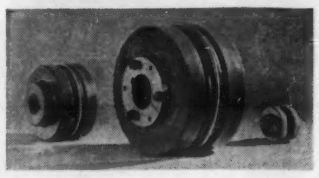
SEND FOR DESCRIPTIVE DATA ON THIS NEWEST MEMBER OF THE SCHRADER FAMILY OF AIR VALVES, CYLINDERS AND ACCESSORIES

Schrader

A. SCHRADER'S SON
Division of Scovill Manufacturing Co., Inc.
459 Vanderbilt Ave., Brooklyn 38, N. Y.

▲ For more details circle NED-185 C on enclosed inquiry slip ▲

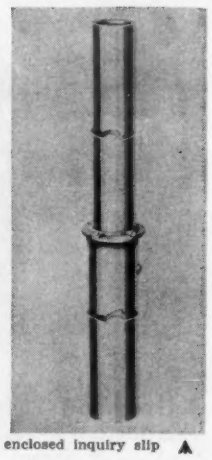
FLEXIBLE COUPLING made in 1.5, 3, and 6-hp ratings



Low cost of Junior line of Sure-Flex couplings is achieved by casting the two flanges of zinc alloy AG40A, which has a tensile strength of 41,000 psi. Molded teeth of the one-piece flexible rubber sleeve lock into teeth of flanges, tightening under torque for smooth transmission of power. Three sizes are for stock bores from 3/8 to 3/4 in., 1/2 to 1 in., and 5/8 to 1 1/8 in. Peak ratings at 1750 rpm are 1.5, 3, and 6 hp, respectively. • T. B. Wood's Sons Co., Fifth Avenue, Chambersburg, Pa.

▲ For more details circle NED-186 C on enclosed inquiry slip ▲

HYDRAULIC CYLINDERS sizes to 75,000 lb



Horizontal stability is a feature of this line of single-acting hydraulic cylinders with diameters from 4 to 18 in. and lengths to order. Capacities range to 75,000 lb and operating pressures are up to 500 psi. Hydraulic piston within the steel cylinder moves on removable bronze bearings. A top bolt ring for attachment to the working surface is standard. Complete system with tank, pump, and controls is available. • Joyce-Cridland Co., 2027 E. First St., Dayton 3, Ohio.

▲ For more details circle NED-187 C on enclosed inquiry slip ▲

FORK TRUCK lifts 1000 lb to 120 in.

Re-engineered Model EA-100 Lectro-Lift fork truck has improved steering, stronger frame, improved cast steel gearbox, Timken bearings on the drive wheel, and an improved accelerating system. The front axle is reinforced by a cantilever system. Speed is infinitely controlled. The 1600-lb truck lifts a 1000-lb load to 120 in. above the floor at 45 fpm. Rapid lowering is hydraulically controlled. Mast tilt is 3 degrees forward and 6 degrees backward. Price is $2270 without batteries. • Lectro-Lift Corp., 2949 S. W. St. Helens Rd., Portland 10, Oreg.

▲ For more details circle NED-188 C on enclosed inquiry slip ▲

DRILLED MORE THAN 100 HOLES IN HARD CONCRETE WITHOUT RESHARPENING*

Impossible with Steel Star Drills

ROUTINE WITH . . .

Thunder-twist® CARBIDE-TIPPED **MASONRY BITS**
FOR USE IN ANY ELECTRIC OR PNEUMATIC HAMMER

*WRITE FOR PROOF

Here's today's most economical hammer bit for drilling in *any* masonry. Does the work of 16 steel star drills . . . and it's a one-man operation! Exclusive combination of vertical and spiral flutes provides *positive* dust removal. No packing, stalling, or binding. Tops in economy and efficiency on every job.

SIZES: 3/16" to 1½" diameter. Extended lengths up to 18".

Other New England Carbide-Tipped Bits Include:

Cyclo-twist® BITS for rotary drilling in ordinary masonry.

Cyclo-Core® Multi-Tipped BITS for rotary drilling in hard masonry.

Designed, Engineered, and Proven for the Job.

Send for FREE "MASONRY BIT SELECTOR GUIDE" and start using today's most economical Masonry Bits.

NEW ENGLAND CARBIDE TOOL CO., INC.
55V Commercial St., Medford 55, Mass.

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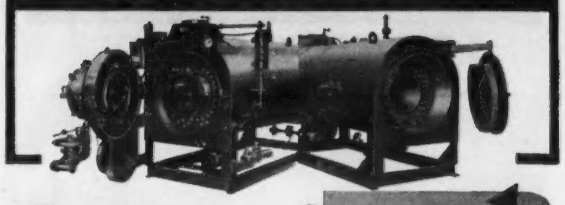
fast, easy inspection and maintenance*



Continental 2-PASS AUTOMATIC BOILERS

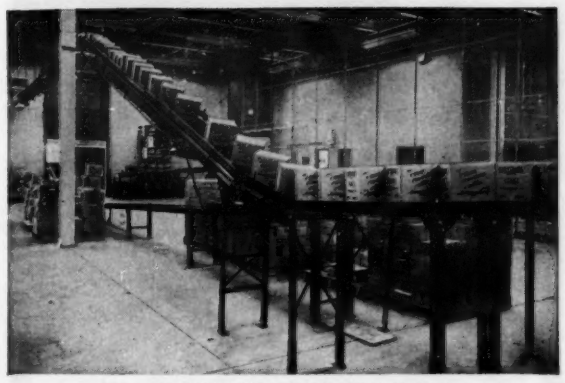
Special features for proven economy in in-plant heating and processing:

- *Exclusive hinged front cover and davited rear cover
- Compact, space-saving design
- Greater fuel economy
- Faster waterside circulation
- Fuel-to-steam (or hot water) efficiency guaranteed to exceed 80%
- Low first cost

NEW BOOKLET: Write today for additional data on Continental 2-Pass Automatic Boiler Bulletin BE-400.

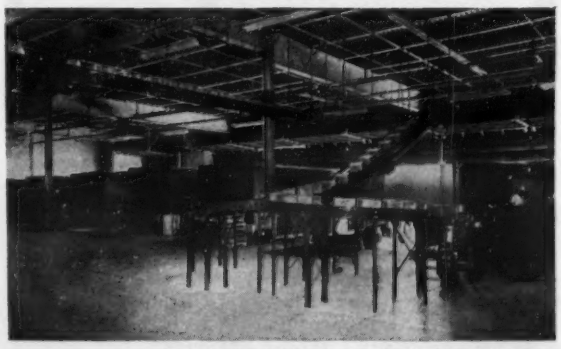
CONTINENTAL BOILER DIVISION
Boiler Engineering & Supply Co., Inc.
Phoenixville, Pennsylvania

▲ For more details circle NED-190 C on enclosed inquiry slip ▲



The 260-foot Oliver-Farquhar conveying system carries cartons from the "marshalling" area directly to the loading docks beyond the wall at left.

At Lambert Hudnut 40 thousand cartons move out every week on an Oliver-Farquhar conveying system!



At the loading dock cartons move above the platform, turn and come down, and turn again directly into the trucks.

38 to 40 thousand cartons travel the Oliver-Farquhar conveyor line every week at the new, thoroughly modern plant of the Lambert Hudnut Manufacturing Laboratories, Inc., Lititz, Penna.* From the moment "order marshalling" starts in the warehouse until the cartons are stacked in waiting trucks, this Oliver-Farquhar system "takes over." It moves the cartons up out of traffic's way, through and out of the warehouse to the loading docks and finally "delivers the goods" into the trucks.

Oliver-Farquhar engineered conveying systems, whether for in-plant handling or loading-out operations, are built to do the job you want done. As pioneers in the engineered conveyor field, we have the experience necessary to build an installation engineered to give you maximum service.

Write, wire or phone for detailed information or, better still, ask for our recommendations. No obligation, of course.

*Lambert Hudnut Manufacturing Laboratories, Inc. Subsidiary of Warner-Lambert Pharmaceutical Co

THE OLIVER CORPORATION • A. B. FARQUHAR DIVISION
Conveyor Dept. M-04, York, Pennsylvania
Factory Branch: 618 W. Elm St., Chicago 10, Ill.

OLIVER Farquhar
POWER BELT AND GRAVITY CONVEYORS

▲ For more details circle NED-191 C on enclosed inquiry slip ▲

GENERAL ELECTRIC

POWER AMPLIFIERS

New high-speed-of-response power amplifiers—now available—offer designed-in characteristics especially suitable as control or power source on high-performance or servo motor systems. Response improved 6 to 8 times over standard ratings. Exceptionally versatile in controlling voltage, current, speed and position on a variety of applications which require fast response. *Direct Current Motor & Generator Dept., General Electric Company, Erie, Pennsylvania.*

▲ For more details circle NED-192 C on enclosed inquiry slip ▲

GENERAL ELECTRIC

SERVO MOTORS

Now direct-current drive motors designed specifically for automatic control systems. New General Electric servo motors with compensated windings offer fast response, low time constant, linear torque per ampere and low inertia. Used with the new G-E power amplifier, servo motors can be applied to improve characteristics of many high performance systems. *Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.*

▲ For more details circle NED-193 C on enclosed inquiry slip ▲

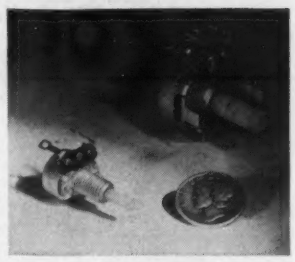
GENERAL ELECTRIC

MULTIPLE-OUTPUT GENERATORS

A new General Electric multiple-output generator makes it possible to drive several adjustable-voltage loads from a single generator—provides light weight, space-saving generating equipment for several independent drive motions. New design has compensating windings arranged so that independent field windings can control power output on any set of brushes. *Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.*

▲ For more details circle NED-194 C on enclosed inquiry slip ▲

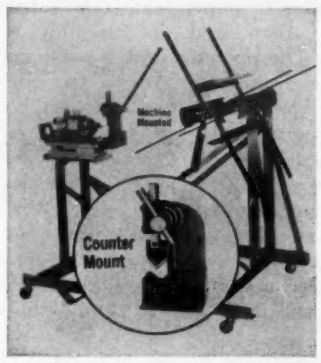
MINIATURE CONTROL
carbon type has ½-in. diameter



Offered with a full-rated switch for 2-amp, 125-v ac service, the Type MLC ½-in. diameter carbon control incorporates a floating contact ring. It is offered with nylon or steel shafts, and is suited for miniature and clock radios, portable television receivers, dictating equipment, and test instruments. • P. R. Mallory & Co., 3029 E. Washington St., Indianapolis 6, Ind.

▲ For more details circle NED-195 C on enclosed inquiry slip ▲

WIRE CUTTING SHEAR
mounts on machine or bench

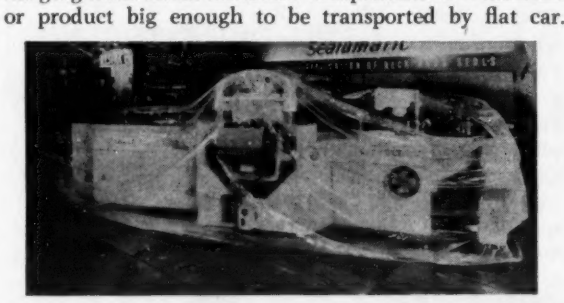


All wire, including Greenfield and BX cable, as well as up to 1¼-in. diameter stainless steel and steel braid hose is cut accurately with this Marvel Flex Shear. It needs only 6-in. mounting space and can be used on wire machines, benches, or counters. This 14-lb tool has a cast base, heat treated rack and pinion, and tool steel blade. Price is $59. • Marvel Rack Mfg. Co., 4230 Main St. N.E., Minneapolis 21, Minn.

▲ For more details circle NED-196 C on enclosed inquiry slip ▲

POLYETHYLENE COVERS
for odd-sized machines and items

Polyethylene covers are available for odd-sized items ranging from small electronic components to a machine or product big enough to be transported by flat car.



Company has designed covers for diesel locomotives, pretzel-twisting machines, automatic pin setters, electronic computers, and bottle-sealing machines. It will make either a package, or a temporary cover for the product. • Canton Containers, Inc., 1101 Ninth St. S.E., Canton, Ohio.

▲ For more details circle NED-197 C on enclosed inquiry slip ▲

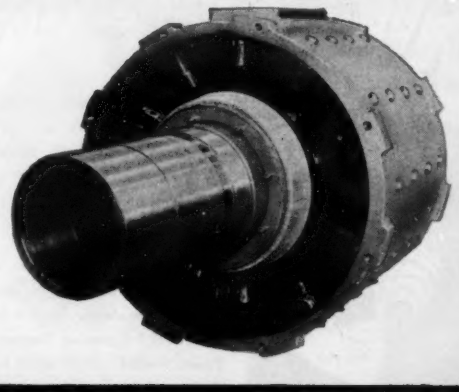
GENERAL ELECTRIC

LOW VOLTAGE MOTORS

New General Electric low voltage, high current drive motors pack more power in smaller frame—are job tailored to meet torque and thermal requirements of a wide variety of battery powered traction, conveyor and lift applications. Typical uses: battery powered trucks, electric vehicles of all kinds; motors for hydraulic pumps, conveyors and lifts. *Direct Current Motor & Generator Dept., General Electric Co., Erie, Pa.*

▲ For more details circle NED-199 C on enclosed inquiry slip ▲

GENERAL ELECTRIC



CUSTOM TAILORED D-C SPECIALS

Pancake-type motors, built-in motors, direct drives and permanent magnet fields are a few of many new General Electric special direct-current rotating machines being developed for modern applications. Designed for special functions, many of these G-E innovations offer important new opportunities for machinery manufacturers to improve product performance and reduce costs. *Direct Current Motor and Generator Dept., General Electric Co., Erie, Pennsylvania.*

▲ For more details circle NED-200 C on enclosed inquiry slip ▲

QUALITY GENERAL ELECTRIC PRODUCTS shown on this page are typical of many d-c specials being developed and built by General Electric to meet industry's dynamic requirements. Within the past 24 months, G.E. has developed ultra-slow-speed motors for gearless direct-drives, underwater propulsion motors and special-purpose contouring drives. Experience gained from these and other developments for more than half a century can be applied to your particular problem quickly and economically. Experienced G-E engineering and manufacturing personnel and modern plant facilities are available to handle—exclusively—the design and manufacture of your non-standard equipment often at a lower cost than standard components with costly modifications. 821-3

If you have a special drive problem, write Specialty D-c Section, Direct Current Motor and Generator Dept., Erie, Pa.

Progress Is Our Most Important Product

GENERAL ELECTRIC

▲ For more details circle NED-198 C on enclosed inquiry slip ▲

WHEREVER SOMETHING
STICKS
You'll Find A Use For

IMS
SILICONE FLUID SPRAY
ON FILM SEALERS, CRIMPER JAWS, EMBOSSING ROLLS, PANS; STAMPING, FORMING DIES—MOLDS OF ALL KINDS
SIMPLY SPRAY ON THIS PURE SILICONE FLUID COATING
And your sticking problems are over!
The most economical way to apply costly Silicone Release Agents!

SAFE — NON-TOXIC
CLEAN — LONG LASTING
Handy Self Dispensing Can
Has No-Fumble, Speedy Spray Head

PRICES (Delivered)
Sample Can $2.00
Per Unbroken Dozen $18.00
Per Unbroken Gross $197.40

INJECTION MOLDERS SUPPLY CO.
3514 LEE RD. CLEVELAND 20, O.

▲ For more details circle NED-201 C on enclosed inquiry slip ▲

DUPLICATING MACHINE
makes spirit process and offset masters, facsimile copies, laminates

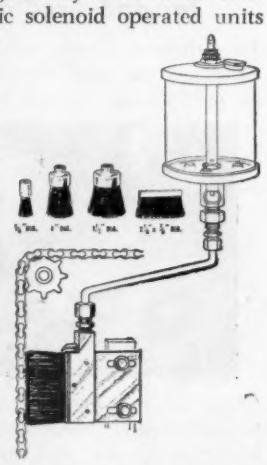
Four important office functions are performed by this Masterfax reproduction machine. It will make direct (spirit) process masters, offset masters, facsimile copies, and will laminate papers, documents, and other literature with a tough protective plastic coating. No typing is required to produce direct process masters. Material to be duplicated is typed, written, or drawn on a clean white Masterfax sheet. This is then inserted into the machine with Masterfax carbon to make the master.

In making offset masters, a paper mat is included with the original and carbon, and the assembly is placed in the machine. The operator makes a simple dial adjustment and closes the top. In 15 sec, the master is ready. Direct process masters can also be made from original copy that is not prepared on Masterfax paper. In facsimile copying, black copy is produced on white paper without liquids or chemicals. Any weight or grade of paper including gummed labels, card stock, and cloth can be used. When used to laminate documents, the process enhances the appearance and protects the item against heat, age, moisture, and chemicals. • **Ditto, Inc.**, 6800 N. McCormick Rd., Chicago 45, Ill.

▲ For more details circle NED-203 C on enclosed inquiry slip ▲

VERTICAL CHAIN OILER
for all chain drives and speeds

Manually controlled oil dispenser used with this vertical chain oiling system is generally selected for continuous operation. Automatic solenoid operated units for intermittent operation start and stop with the driving motor, oiling only when the chain moves. Feed rate is adjusted by a sight valve. Copper tubing connects the brush applicator and oil dispenser. Oil seeps through the horizontally mounted brush to spread a thin, even film on the chain. Standard brushes in 5/8, 1, and 1 1/2-in. diameter, and 3/8 x 2 1/4-in. rectangular sizes are adjustable for wear. Horsehair bristle is for general use, nylon for high speed applications, and stainless steel for high temperatures and chain cleaning. • **Oil-Rite Corp.**, 2364 Waldo Blvd., Manitowoc, Wis.



▲ For more details circle NED-204 C on enclosed inquiry slip ▲

MAXIMUM WORKING FORCE IN MINIMUM WORKING SPACE

Air or Hydraulic

milwaukee CYLINDERS

- Quality Construction Throughout
- Guaranteed Top Performance
- No Costly Down Time
- Precision Designed — Heavy Duty Service
- Conforms to JIC Specifications

Get all the facts and see how Milwaukee Cylinders can save space and weight . . . Save on original cost and save on maintenance. Write today for Free Bulletins A-100 and H-100.

Standard Models Hydraulic Bore Size 1 1/2 to 12" Air Bore Size 1 1/2 to 14" Specials built to your specifications

MILWAUKEE CYLINDER CO.
Division of L. & M. Machine Company
5755 SO. PENNSYLVANIA AVE., CUDAHY, WIS.

▲ For more details circle NED-206 C on enclosed inquiry slip ▲

For
- Handling "Hot" Materials
- Cleaning in Hazardous Areas
- Other "Problem" Tasks

SPENCER
"Special" Portable Vacuum Cleaners

Units available for all types of difficult or dangerous cleaning requirements. Typical of Spencer "specials" are cleaners
- Without electric motors or wiring—powered from existing compressed air lines.
- Equipped with "absolute" filters.
- Of abrasion-resistant construction.
- With centrifugal, liquid immersion or bag type separation.

Check Spencer today on your special needs in a vacuum cleaner.

REQUEST DESCRIPTIVE SHEET ON AIR JET CLEANERS, COMPRESSED AIR POWERED.

The SPENCER TURBINE COMPANY
HARTFORD 6, CONNECTICUT

▲ For more details circle NED-207 C on enclosed inquiry slip ▲

Announcing

A MACHINE FOR Rapid C-O-N-T-I-N-U-O-U-S SPRAY COATING OF ELECTRICAL AND ELECTRONIC COMPONENTS HAVING COAXIAL LEADS

Accurately coats diodes and small components of varying lengths with sprayable materials at a rate of up to 8,000 per hour, depending on the coating requirements and size of the components.

A resinous composition, such as an epoxy compound, can be used to completely form a light-tight seal for diodes. Capacitors, fuses, resistors and other coaxial lead components can be provided a base coat for color banding and labeling, and a baked and abrasion-resistant clear coating that protects the designations.

The coating is confined to desired areas by two accurately spaced traveling masking strips as racks, loaded with diodes, move continuously through the spray station. The diodes, while in the racks, are spun so as to assure an even coating. The coating is applied only to the diodes and desired portions of its lead wires so as to prevent cracking if the wires are bent for insertion in a printed circuit board. There is no coating to interfere with soldering. The diodes remain in the racks for one-handling of both the spraying and, if desired, the baking operations. The magazine will handle racks preloaded from a previous operation or empty racks which can be loaded as they emerge from the magazine.

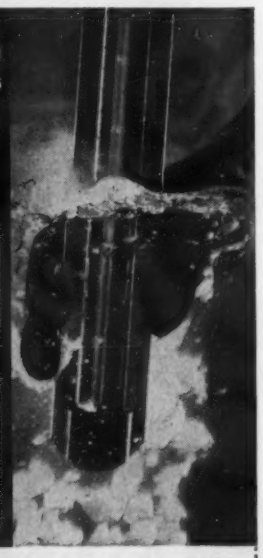
Automation is practical, inasmuch as the coating material is confined by remote masking, not mechanical means, thus ELIMINATING THE NEED OF SPRAY MASKS, REGISTERING DEVICES, AND MASK CLEANING OPERATIONS. The machine can be used in conjunction with a lead straightener, and orienting and testing machine, and can be adapted to fit individual requirements.

C-M Conforming Matrix CORPORATION

338 TOLEDO FACTORIES BUILDING • TOLEDO 2, OHIO
Phone CHerry 8-3518

▲ For more details circle NED-202 C on enclosed inquiry slip ▲

For Extra Comfort in Hot and Cold Liquids
Stanzoil NL-34 by PIONEER



Knit-Lined Gloves for Greater Comfort — Elastic knit cotton lining absorbs perspiration, slips on easily, insulates from heat and cold.

Tough Neoprene Coating — Resists abrasion, oils, acids, caustics, solvents, greases.

Curved Snug-to-Tip Fingers — Designed to fit the shape of hand naturally, comfortably.

Non-Slip Grip — For a safer-than-bare-hand grip.

Send for PIONEER's FREE "Foolproof Glove Selector"

The PIONEER Rubber Company (NL-34)
234 Tiffin Road, Willard, Ohio
Gentlemen:
Please send me:
☐ New "Foolproof Glove Selector" by PIONEER
☐ 1960 PIONEER Industrial Glove Catalog
☐ 17" x 22" Full Line Glove Wall Chart
Firm _____
Address _____
City _____ Zone ____ State _____

▲ For more details circle NED-205 C on enclosed inquiry slip ▲

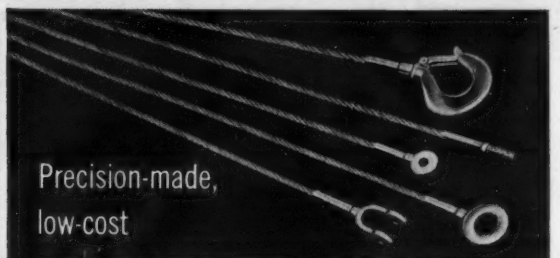
COST OF PREVIOUS SERVICE ..... $8.00 per week
COST OF TURN-TOWL SERVICE ..... $2.10 per week
ANNUAL SAVING $306.80

Here is a typical case history of what happens when a consumer tests Turn-Towls against the towel service in use. This happened to a national firm's Buffalo (N.Y.) division.

You can save with Turn-Towl service too. Write for name of nearest distributor.

MOSINEE Sulphate Towels
BAY WEST PAPER CO.
1084 W. Mason St.
GREEN BAY, WISC.

▲ For more details circle NED-208 C on enclosed inquiry slip ▲



Precision-made, low-cost

MACWHYTE CABLE ASSEMBLIES

"Safe-Lock" wire rope assemblies are made in a wide range of sizes for machine parts, controls, and operating devices. They are fabricated to the exact size and length you need, with fittings on one end or both ends—ready to use for safe, easy, quick, low-cost installation. Ask for catalog 5601. Macwhyte Wire Rope Company, Kenosha, Wis., U.S.A.

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MACWHYTE Wire Rope COMPANY

For more details circle NED-209 C on enclosed inquiry slip

Now Available!

Design data on built-in worm & gear sets for OEM applications

Machinery designers will welcome the complete and detailed engineering data contained in Catalog 201F covering Cleveland Worm and Gear Sets for built-in applications.

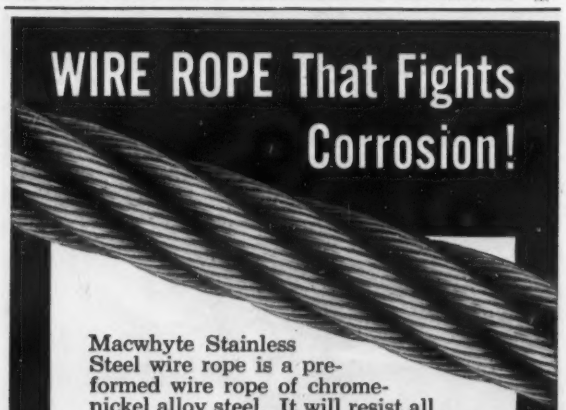
Standardized Cleveland components can be furnished in any design to meet your specialized requirements. Also, Cleveland maintains a continuing inventory of worm gear files from which tools can very often be selected to handle particular job requirements.

Write for your free copy today, and see how customized Cleveland Worm and Gear Sets can help you produce a better, more economical product.

CLEVELAND WORM & GEAR DIVISION
Eaton Manufacturing Company
3283 East 80th Street • Cleveland 4, Ohio

For more details circle NED-210 C on enclosed inquiry slip

WIRE ROPE That Fights Corrosion!



Macwhyte Stainless Steel wire rope is a preformed wire rope of chrome-nickel alloy steel. It will resist all manner of atmospheric corrosion, alkaline conditions, acids of an oxidizing nature (such as nitric), neutral brines, food substances, marine atmospheres, and temperatures harmful to ordinary carbon steel ropes.

For more information ask for circular 4930. Macwhyte Wire Rope Company, Kenosha, Wisconsin, U.S.A.

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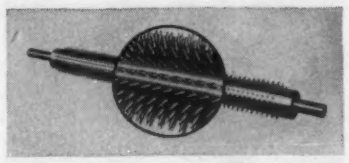
MACWHYTE Wire Rope COMPANY

For more details circle NED-211 C on enclosed inquiry slip

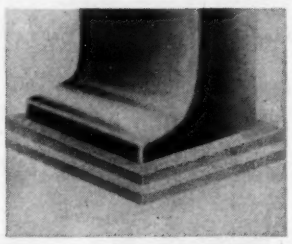
SPIKED ROLLS in many shapes and sizes



Rolls spiked with sharp or blunt points are available for perforating, punching, mixing, chewing, tearing, scratching, shredding, dimpling, or conveying. They can be repinned many times when pins become dull. Sharp needle points are driven backward into the roll and end caps removed when pins become dull. Rolls and cylinders are made from steel, stainless steel, brass, wood, or combinations of these materials in many shapes. Sizes range up to 24 ft long and 36-in. diameters. Points can be close or far apart and set straight or at an angle. • **Robert A. Main & Sons, Inc.**, 501 W. Main St., Wyckoff, N. J.

For more details circle NED-212 C on enclosed inquiry slip

FELT MOUNTING PADS in 50, 100, and 250-psi densities



All types of machinery from light equipment weighing 50 lb to heavy impact equipment up to 220,000 lb dead weight can be mounted on Stanmount Green Line high density felt mounting pads. Pads compress with a permanent set equal to 5 per cent of total thickness within 72 hr. They reduce transmitted vibration by 85 per cent. Made in 50, 100, and 250-psi densities, pads are not affected by oil saturation and resist water and moisture. Floors can be washed around the mounted machinery. Material is offered in sheet lots or cut pad sizes and can be cut, cemented down, and relocated. • **Hilman Equipment Co.**, 506 Baltimore Blvd., Sea Girt, N. J.

For more details circle NED-213 C on enclosed inquiry slip

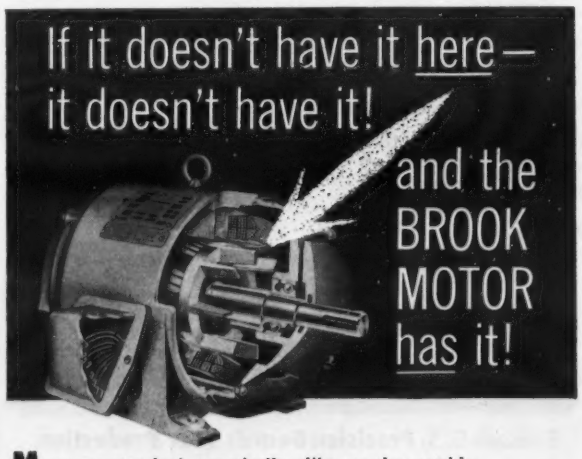
GLUE DISPENSING TUBE dispenses a 1½-mm drop

DISPENSING TUBE

Precision gluing of many items heretofore difficult or inaccessible is made possible with the Twelve/1000ths dispensing tube. The 0.012-in. diameter nozzle dispenses a drop of glue as small as 1½ mm in diameter, or a total of 38,000 such drops from the ½-oz tube. Dispenser will do industrial gluing jobs demanding exactness. • **Bond Adhesives Co.**, Box 406, Main P. O., Jersey City. 3, N. J.

For more details circle NED-214 C on enclosed inquiry slip

If it doesn't have it here—it doesn't have it!



and the BROOK MOTOR has it!

MANY MOTORS look practically alike on the outside, but it's what is inside that counts. There is no motor with better windings or more ample bearings—few motors compare favorably. Yet, the Brook Motor costs less, because of volume production, modern techniques, distribution in 76 countries and a realistic pricing policy. Brook Motors have established excellent performance records for over 56 years in every industry using a.c. motors. From 1 to 600 H.P. Send for literature.

Factory Representatives, Warehouses, Dealers in Principal Cities.

SINCE 1904 BROOK ELECTRIC MOTORS

"World's Most Respected Motor"

BROOK MOTOR CORP.
3302-04 W. Peterson Ave., Chicago 45, Illinois
In Canada: Brook Electric Motors of Canada, Ltd.
250 University Ave., Toronto, Ontario

For more details circle NED-215 C on enclosed inquiry slip

Speed production... increase safety with

MACWHYTE SLINGS

Safer, easier, and faster handling is assured by Macwhyte's complete line of balanced braided slings, single-part wire rope slings, and "Safe-Lock" swaged fitting slings. Ask for Sling Bulletin 5308-R. Macwhyte Wire Rope Company, Kenosha, Wisconsin, U.S.A.

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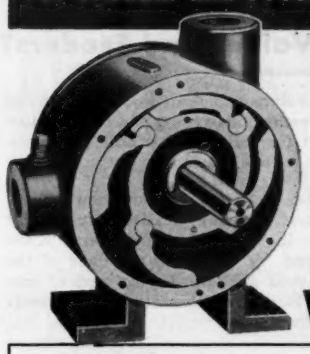
MACWHYTE Wire Rope COMPANY

For more details circle NED-216 C on enclosed inquiry slip

For Vacuum and Pressure Applications



Get these Exclusive Advantages of

LEIMAN HINGED VANE DESIGN

- Four curved vanes on easy-action hinges maintain sealed contact with cylinder walls by centrifugal force.
- Cast Iron Vanes and Cylinders hone themselves to hard, glassy smoothness—take up their own negligible wear.
- Extra-large Air Space provides 2 to 3 times more air capacity.
- Minimum Maintenance. Need only periodic oiling. Fewer moving parts, no composition vanes to replace.
- Also quiet operation—smooth air flow—every pump rigidly tested.

LEIMAN Rotary Positive **AIR PUMPS**

If your machines now use air pumps—if your new designs require air pumps, contact us for engineering assistance and data of Leiman Air Pumps.

WRITE FOR NEW CATALOG plus Application Book showing hookups.

Vacuum to 29.9" Hg.
Pressure to 20 p.s.i.g.
Volume to 162 c.f.m.

LEIMAN BROS., INC.
167 Christie St., Newark 5, N. J.
Established 1887

For more details circle NED-217 C on enclosed inquiry slip

MACWHYTE MONEL METAL WIRE ROPE RESISTS CORROSION

Macwhyte Monel Metal wire rope is a preformed wire rope of a high-nickel-content alloy steel. Monel Metal is more resistant to corrosive substances than any other commercial metal. Monel Metal wire rope will resist pickling solutions, salt water, fruit juices, food acids, soaps, and alkaline substances. It also resists such acids as sulfuric, hydrochloric, and hydrofluoric. It is ideal for use on hoists, conveyors, and controls exposed to highly corrosive conditions.

For more information, or specific recommendations for your application, write: Macwhyte Wire Rope Company, Kenosha, Wis., U. S. A. Ask for bulletin 49-30.

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MACWHYTE Wire Rope COMPANY

For more details circle NED-218 C on enclosed inquiry slip

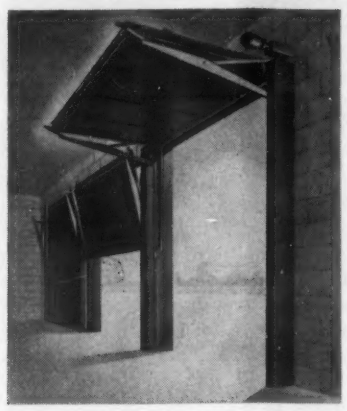
Hose and hose fittings are easy to select from this 72-page Parker Catalog

It's easy to choose the best Parker Hose and Parker Hose Fittings to handle practically any gas from air to freon, practically any liquid from water to synthetic hydraulic fluids from the data, specs, and recommendations in the complete Parker Hose Fittings and Hose Catalog 4400. Also includes useful information on assembling both standard and Parker "no-skive" Hoze-Lok Fittings to 15 types of Parker Hose.

Your Parker Hose Fittings and Hose distributor, listed in the Yellow Pages, can furnish you a copy. Or write . . .

Parker FITTINGS AND HOSE DIVISION
17325 Euclid Avenue • Cleveland 12, Ohio
A DIVISION OF PARKER-HANNIFIN CORPORATION
▲ For more details circle NED-219 C on enclosed inquiry slip ▲

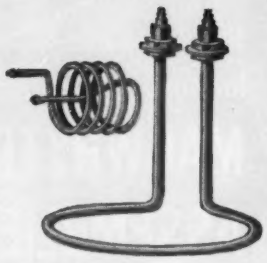
TRACKLESS INDUSTRIAL DOOR
22-ft high unit opens in 11 sec



An unusual linkage system enables the Byrnover industrial door to open at a rate of 120 fpm. The all-steel two-leaf tubular turn-over door is available in sizes ranging from 10 x 10 ft to 32 x 22 ft, latter of which will open or close in only 11 sec. It is designed for exterior truck and railroad entrances, and for in-plant use. Head room required above the soffit is 12 in., and jamb width required between adjacent doors is only 12 in. Counterbalanced door withstands wind loading of 20 lb per sq ft. It is operated by fractional-hp motor, or by chain pull if power fails. • **Byrne Doors, Inc.**, 1603 E. Nine Mile Rd., Ferndale, Mich.

▲ For more details circle NED-222 C on enclosed inquiry slip ▲

HEATING ELEMENTS
Designed to *Your* Specifications

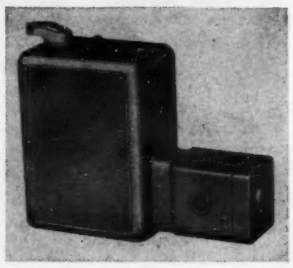


TUBULAR HEATERS for Tanks, Kettles, Baths, Extruders
STRIP HEATERS for Ovens, Dryers, Process Equipment
CARTRIDGE HEATERS for Dies, Molds, Platens, Defrosting

OIL & WATER IMMERSION HEATERS
The Complete Line of TRENT Metal Sheathed Heating Elements Assures On-the-Spot Controlled Heat to Your Most Exacting Requirements.

WRITE FOR BULLETIN 74-TE.
TRENT INC.
Electrically Heated Industrial Equipment
251 LEVERINGTON AVE., PHILADELPHIA 27, PA.
In Canada Supreme Power Supplies Limited, Toronto 14
▲ For more details circle NED-226 C on enclosed inquiry slip ▲

SOLENOID VALVE
controls from 1000 to 9000 psi

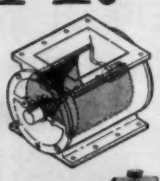


Poppet Type SV-1 solenoid valve is normally open to allow circulation of the hydraulic fluid through the valve and back to the reservoir. When actuated, the high pressure two-way unit blocks the return line and forces the oil through the hose to operate the workpiece. Mounted directly on the power unit, it requires only a single hose to the work and readily controls 1000 to 9000 psi. The 3¼ x 7 x 8½-in. valve weighs 8 lb, and is available with hand or foot switch for operation on 110 v, 60 cycles, ac. Three and four-way versions in a wide range of voltages and cycles control up to 6000 psi. Pressure switches, limit switches, check valves, and other control devices can be incorporated. • **Manco Mfg. Co.**, Washington Street, Bradley, Ill.

▲ For more details circle NED-223 C on enclosed inquiry slip ▲

Q • Why specify Fuller
• Rotary Valves and Feeders?

A: Fuller rotary valves and feeders are products of more than 30 years of designing and manufacturing equipment for handling dry bulk materials. They are built to save you money in the long run!



Fuller rotary valves feature close clearances and a double seal, which prevent leakage in the closed position. Knife edges and "V" slots at the ends of the rotor avoid sticking due to packed material. Built for either manual or remote motor control.

Fuller feeders are ruggedly built to precision tolerances for long, efficient service handling Portland cement, cement raw materials, pulverized coal, hydrated lime, etc. Available in wide range of sizes, with round or rectangular openings. Standard construction, cast iron; special metals if desired.

Technical literature is available upon request.

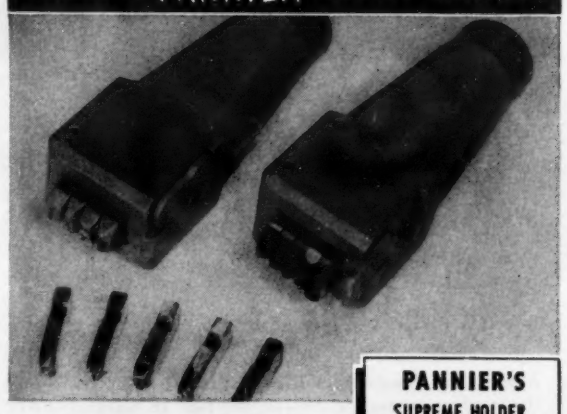
Fuller
pioneers in harnessing AIR
1181 F-19
FULLER COMPANY
154 Bridge St., Catasauqua, Pa.
SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
▲ For more details circle NED-220 C on enclosed inquiry slip ▲

Punching & Notching Units

Punch Products Corp.—Dimensional drawings of seven standard Unipunch units for making round and shaped holes with 3.5-in. diameters in up to ⅛-in. thick steel are found in 16-page Catalog B. Units for making up to 5 x 5-in. corner notches, 90-degree V-notching units, and edge notching units for ⅛-in. steel are also detailed. All Series B units have 5½-in. shut height.

▲ For more details circle NED-224 C on enclosed inquiry slip ▲

ANOTHER PANNIER MASTER MARKER!



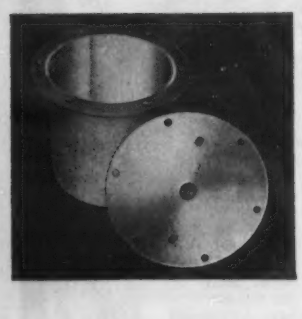
New Roto-Pin type lock is integral part of *all* Pannier Supreme Holders . . . eliminates loose, bent, dropped, or lost pins . . . flip it open to change type . . . flip it back to securely lock type in clear-marking position.

PANNIER'S SUPREME HOLDER WITH ROTO-PIN LOCK
Safe, fast type changing. Holder in variety of styles.
Machined from High-Grade Bar Tool Steel. Hardened anvil maintains type alignment.
Striking Head of Tool Steel . . . Replaceable to add long service life to Holder.

Write for complete data.

MARKING DEVICES
THE PANNIER CORPORATION
301 Pannier Building • FAirfax 1-5185 • Pittsburgh 12, Pa.
Offices: Los Angeles • Chicago • Cleveland • Philadelphia • Birmingham
▲ For more details circle NED-227 C on enclosed inquiry slip ▲

TEFLON* SHEET Tank Linings



Garlock Tank Linings of Teflon offer the ideal solution to your equipment lining problems. The toughest material yet produced, Teflon gives positive protection against the harshest corrosives.

Hydrochloric, hydrofluoric, and nitric acids, plus the stronger alkalies, oxidants, and solvents cannot harm Teflon Linings. They're easy to clean, non-brittle, non-contaminating, non-flammable, and can be used in *extreme temperatures.*

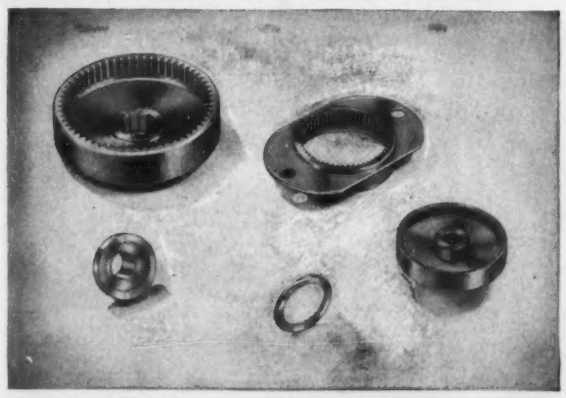
Anti-stick service. For applications where extremely low coefficient of friction is indicated, Teflon Linings can be cemented with excellent bond strength. Typical applications include frictionless liners for ducts, hoppers, tanks . . . facings for valves, machine parts.

GARLOCK

You can obtain details on Teflon Linings by writing to Special Products Department, The Garlock Packing Company, Camden 1, New Jersey.

*DuPont Trademark for TFE Fluorocarbon Resin

▲ For more details circle NED-221 C on enclosed inquiry slip ▲



Famous G.S. Precision Guards Your Production

Whether you need hundreds or thousands, G.S. gives you a degree of UNIFORM accuracy *unapproached by any other Small Gear maker in the world!* That assures smooth, dependable performance and low assembly costs.

G.S. Small Gearing is mass-produced in a range of sizes from 8 to 96 dp . . . from ⅛" to 8" diameters, and from any Gear material. Capable G.S. engineers will gladly help you develop the ONE best and most economical design for your specific needs. Send drawings and specifications or a complete description.

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2635 WEST MEDILL AVENUE, CHICAGO 47, ILLINOIS
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARS
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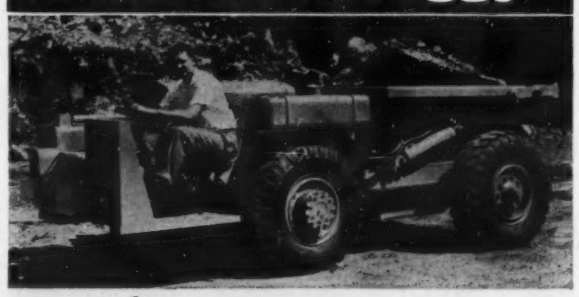
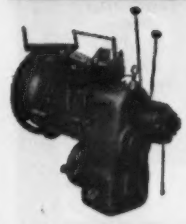
FUNK Units lend EXTRA performance to this mine buggy





On this Dart Mine Buggy, a compactly-designed FUNK transmission provides multiple speed control and doubles as a drop box, thus saving the cost of a 3-stage gear box or a fixed chain drive.

And a FUNK Revers-O-Matic Drive, equipped with a torque converter, allows the operator to change speed and direction of travel with foot levers — leaving hands free.

It always pays to look for FUNK Modular Power Units on the equipment you buy.

FUNK MFG. CO. Box 577-C, Coffeyville, Kansas
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Increase Your Production Capacity the Easy, Low-Cost Way! Use the . . .

Alcoa JOBBING DIVISION!

In a production jam because of temporarily inadequate facilities? Not tooled up for components you'd like to be making? Need specialized equipment or personnel?

Alcoa's Jobbing Division can solve any or all of these problems . . . save you money and time . . . give you the service of all the metal-working machines and fabricating facilities you need *without* capital investment . . . offer engineering and design help . . . and can produce it for you!

For information, see your nearest Alcoa sales office. (For a free, 16-page booklet describing Alcoa's Jobbing Division facilities, check the coupon at the bottom of this page.)

Your Guide to the Best in Aluminum Value — ALCOA ALUMINUM — CALL YOUR NEAREST ALCOA SALES OFFICE!

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For Bearings and Bushings That Cost Less, Give More and Last Longer . . .

Alcoa Aluminum BEARING STOCK!

Need bearing stock for bushings and bearings? Your Bunting Distributor stocks Alcoa® Aluminum Bearing Stock in a warehouse not far from *you!*

Aluminum bearings withstand loads up to 10,000 psi; run as much as 20 degrees cooler than other materials; reduce starting torque. Aluminum is easily machined. It conforms readily to misaligned shafts. It's longer lasting in tough service.

Call your Bunting Distributor now, and start to save money. Like more information? Check the coupon below!

Your Guide to the Best in Aluminum Value — ALCOA ALUMINUM — CALL YOUR BUNTING DISTRIBUTOR TODAY!

▲ For more details circle NED-230 C on enclosed inquiry slip ▲

Cut Your Fastener Inventory! Get Any Type or Size; High-Strength, Heat-Treated Alloys; Low Prices; Fast Delivery . . . of

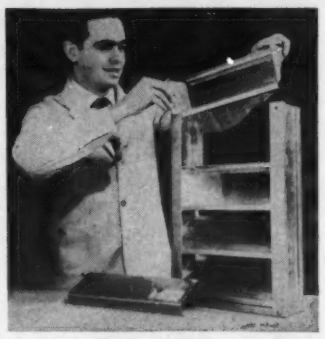
Alcoa Aluminum FASTENERS

No need to maintain a big inventory on fasteners. Look in the Yellow Pages for your local Alcoa distributor. He has the largest line of aluminum fasteners available today—Alcoa® Aluminum Bolts, Nuts, Rivets, Machine Screws, Wood Screws, Sheet Metal Screws, Washers, anything you need in standard types and sizes—and offers complete stocks, fast deliveries, lowest prices. Alcoa Aluminum Fasteners are made from corrosion-resistant, fully heat-treated, high-strength alloys with full threads, no burrs. And you'll get *full count* on every order . . . no misfits, "seconds," rejects. No need to stock too many, no need to run short. Call your local Alcoa distributor! (For more data and samples, check the coupon at the bottom of this page.)

Your Guide to the Best in Aluminum Value — ALCOA ALUMINUM — CALL YOUR NEAREST ALCOA DISTRIBUTOR!

▲ For more details circle NED-231 C on enclosed inquiry slip ▲

VENTILATING LOUVERS
fixed or adjustable aluminum types

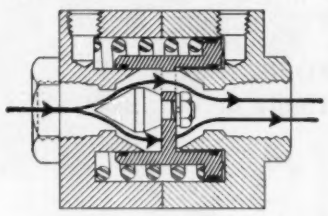


Line of fixed and adjustable ventilating louvers with interchangeable parts comprises sizes ranging up to heavy industrial units 12 ft high and 5 ft wide. They are made from anodized, porcelainized, baked enamel, or painted 0.063-in. Alcoa aluminum sheet. Only eight aluminum screws hold the easily assembled units together. • **Walcon Corp.**, Ecorse 29, Mich.

▲ For more details circle NED-232 C on enclosed inquiry slip ▲

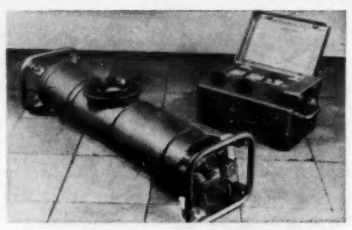
IN-LINE VALVE
rated 300 psi at 180° F

Flow coefficient of 7.5 is afforded by this compact ½-in. in-line valve which is rated for 300 psi maximum pressure at 180° F. The 2¾-in. diameter by 3½-in. long valve is ported on both sides of piston and can be assembled for spring-to-open or spring-to-close operation. Plug is easily reversed in the field without extra parts. Valve can be operated without the spring as a double-acting piston for hydraulic actuation. Corrosion and high-temperature resistant O-ring construction is available. • **George W. Dahl Co.**, 86 Tupelo St., Bristol, R. I.



▲ For more details circle NED-233 C on enclosed inquiry slip ▲

PORTABLE X-RAY
self-contained unit weighs 231 lb



Shockproofed, rayproofed, and weatherproofed for outdoor operation, the Norelco PG 300 portable industrial x-ray unit provides high penetrating power and good radiographic definition. Safety devices prevent tube overload. The 231-lb tubehead may be hoisted to remote areas for radiography of more than 3 in. of steel. Emergent beam angle is 40 degrees and focal spot size is 2.3 mm. X-ray voltage is continuously adjustable under load in a stepless range from 65 to 300 kv. Duty cycle is 100 per cent continuous with water cooling, and intermittent with air cooling. Power required is 220 v, 50/60 cycles, 9 amp. • **Philips Electronics & Pharmaceutical Industries Corp.**, Philips Electronic Instruments Div., 750 S. Fulton Ave., Mt. Vernon, N. Y.

▲ For more details circle NED-234 C on enclosed inquiry slip ▲

Stop Accidents! Protect Your Employees, Keep Production Moving . . . with

Alcoa Aluminum ABRASIVE TREAD PLATE!

Get lasting protection against slipping with Alcoa® Aluminum Abrasive Tread Plate . . . made with tough particles of fused aluminum oxide. Much lighter in weight, it's *much easier to install.* Corrosion resistant, it's *maintenance-free.* Long usage only renews the surface, uncovering embedded abrasive particles. Wherever the floor becomes wet, oily, greasy—wherever slippery materials accumulate—install Alcoa Aluminum Abrasive Tread Plate! (For sample and free booklet, check the coupon at bottom of this page.)

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Quick Delivery of Finer Welding Supplies Means a Better Welding Job . . . Faster!

Alcoa Aluminum WELDING MATERIALS

Lower final costs, improve finished quality by using Alcoa materials! Get answers, too—Alcoa offers you the benefit of extensive research in alloys, techniques, joining methods.

Here are some of Alcoa's welding materials:

- IG (Inert Gas) Welding Electrode
- Coiled Welding and Brazing Rod
- Straight-Length Welding and Brazing Rod
- Welding, Brazing and Soldering Flux
- Solder

For technical assistance, call your nearest Alcoa sales office. For quick delivery of materials, call your nearest distributor. (For welding films and recently released welding design information, check coupon below.)

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Offering the Broadest Distribution Organization in the Field . . .

ALCOA SALES OFFICES AND DISTRIBUTORS

Look in the Yellow Pages under "Aluminum"! There is an Alcoa sales office or an Alcoa distributor very near to you. Warehouses fully stocked with Alcoa® Aluminum products are strategically located everywhere. All the resources of Alcoa are yours, too: design help, research and development, production facilities, literature! Use this coupon for fast results . . . right now.

Aluminum Company of America
1689-C Alcoa Building, Pittsburgh 19, Pa.

Please send me the samples or information I have checked: Sample ☐ Free Booklet ☐ on Alcoa Aluminum Abrasive Tread Plate. Samples ☐ More Data ☐ on Alcoa Aluminum Industrial Fasteners. Free 16-Page Booklet ☐ on Alcoa Aluminum Fabricating Facilities. Information on Welding Films ☐ Latest Welding Design Information ☐ More Information on Alcoa Aluminum Alloy Bearing Stock ☐

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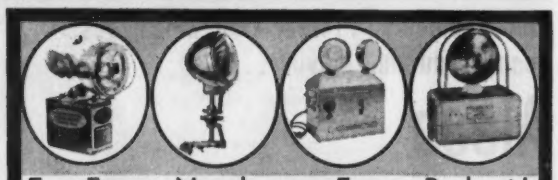
ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA



For Every Need . . . Every Budget!

MAKE YOUR OWN CHOICE!

There are complete lines of Carpenter Emergency Lights for all basic needs . . . the widest choice of powerful, dependable, durable lights available.

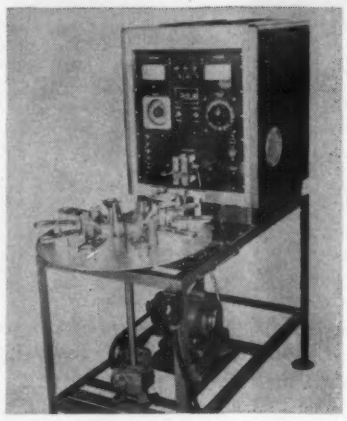
WARNING LIGHTS: Vehicle and stationary types . . . colored, flashing, oscillating, revolving!
HANDLIGHTS: Powerful "Portalites" with the famous extra-wide coverage! Rechargeable or dry battery types.
VEHICLE LIGHTS: Searchlights, floods, colored signal and warning lights for all service and emergency vehicles.
PANIC LIGHTS: Watchmaster "Automatalites" automatically guard against light failures. All types including explosion-proof, dust-tight, and remote control.

Your Guide to over 100 Emergency Lights . . . the Carpenter Catalog. Write for copy.

CARPENTER MFG. COMPANY
638 Bradley Street, Somerville 45, Mass. Telephone MOnument 6-4300

▲ For more details circle NED-239 C on enclosed inquiry slip ▲

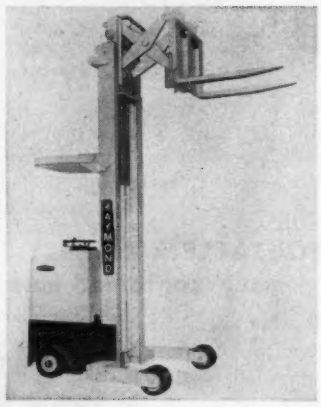
TURNTABLE
for use with induction heaters



Continuously moving turntable for use with McDowell induction heating generators requires no direct connection for either RF current or cooling water. It can be used with any generator rated up to and including 10 kw for soldering, brazing, or making glass-to-glass seals. Speed is adjustable. The copper holder moving into the high impedance field, acts as a combination low impedance transformer secondary coil and as a work coil. Mechanical insertion and withdrawal of part into and from the coil field is eliminated. ● **McDowell Electronics, Inc.**, 105 Forrest St., Metuchen, N. J.

▲ For more details circle NED-242 C on enclosed inquiry slip ▲

NARROW AISLE FORK TRUCK
8-hp unit has single drive wheel



This heavy-duty narrow aisle electric fork truck with single drive wheel and offset caster supplements present dual drive unit (*NED, June* '58). Slightly lower in price, the new truck retains most of the features of the original machine. Hydraulic lift is driven by battery operated 8-hp motor and lifts up to 4000-lb loads 20 ft high. Separate motor powers the Reach Fork mechanism and special attachments. Single drive is powered by a pancake type motor coupled to the offset drive wheel by planetary gears. ● **Raymond Corp.**, 41-180 Madison Ave., Greene, N. Y.

▲ For more details circle NED-243 C on enclosed inquiry slip ▲

Mineral Insulated Thermocouples

Conax Corp.—Con-O-Clad mineral insulated thermocouples, how they are made, how to order them, specifications, and other information are reviewed in 20-page Catalog 300. Thermocouples are flexible, fast response devices with temperature range up to 3000° F and with probes from 0.040 to 0.375 in. OD.

▲ For more details circle NED-244 C on enclosed inquiry slip ▲

Most Practical Motor Base Ever Designed for V-Belt Drives

Lovejoy

Auto-Tension
MOTOR BASE

Inexpensive and easy to install . . . *automatically* maintains exact belt tension for all load conditions and compensates for belt stretch. Does not require adjustment or maintenance. Belts can be changed without disturbing motor.

Available for horizontal drives only . . . four base sizes for NEMA frames from 1/6 to 7½ hp. Immediate shipment.

Lovejoy Motor Bases for horizontal, angular or vertical mounting: available in tilting types for fractional to 3-hp. motors . . . sliding types for fractional to 15-hp. motors.

ASK FOR RECOMMENDATIONS AND PRICES. Request Bulletins 1300 and B-1958, also Catalog 1200.

LOVEJOY FLEXIBLE COUPLING COMPANY
4803 WEST LAKE STREET • CHICAGO 44, ILLINOIS

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At Last . . .
Positive Protection Against
Paint Spray
with the NEW

FLEX-A-PRENE®
PAINT MASK

New Efficiency
The sensational new FLEX-A-PRENE Paint Mask keeps out paint pigments and solvents with amazing efficiency, yet it's light (just 1 ounce), comfortable and so easy to talk and breathe through you hardly know you're wearing it.

New Economy
Flex-A-Prene's low first cost is only part of the story. Most important savings come from its endurance in service and time saved through less frequent filter replacements. You can expect at least 100 hours of exposure before filter replacement is necessary.

Sample: $1.50 postpaid (INDUSTRIAL PRICE ONLY)

FLEXO Products, Inc.
Westlake, Ohio

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STOP FIRES FROM CARELESS SMOKING WITH SIPCO DUNKING STATIONS

Canister extends only 5½" from mounting surface.

Thousands of businesses, Industries and Institutions have discovered that SIPCO DUNKING STATIONS not only eliminate fire hazards from smoking, but also prevent litter, thus greatly reducing cleanup time.

Heavy duty cast aluminum canisters guaranteed 3 years against breakage. Over 20 different models. Standard and Jumbo sizes. Wall models, Floor models and permanent mounting models. Grey crinkle or bright polished models. With or without message signs and decals. Special colors, signs or decals on special order.

SIPCO DUNKING STATIONS are designed to be partly filled with water. "Smokes" dropped in the large top hole are OUT FOR GOOD —NO SMOULDERING—NO ODORS—NO UNSANITARY CONDITIONS. Lift off the canister or lift out an innerliner, dump it and the cleaning job is done.

MODEL 4J: For permanent mounting on walls, posts, columns, etc., in public areas. Eliminates pilfering problem. Bright polished JUMBO canister furnished with glass-fiber innerliner.

MODEL 1JD: Jumbo size deluxe floor model. Heavy weighted base and eye catching sign. Height 38", Wt. 26 lb. Ideal for halls, aisles, landings, etc.

MODEL M: New MIDGET SAFE SMOKER designed for use in telephone booths, elevators, toilet stalls, on benches, chairs, work tables or any location where a small "individual type" smoker is needed. Cast aluminum canister; coil spring across hinged lid safely "parks" unfinished "smokes". Available in grey crinkle or DELUXE bright polished finishes.

Model 1JD

Model 4J

MODEL M

WRITE FOR ILLUSTRATED BROCHURES

STANDARD INDUSTRIAL PRODUCTS CO.
DEPT. D • 3527 FARMINGTON RD. • PEORIA, ILLINOIS

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NOW for the FIRST TIME

VISIT OUR BOOTH '60 ASTE TOOL SHOW
BOOTH 1742

REAL INTERCHANGEABILITY IN UNITIZED TOOLING

NEW UNIPUNCH "AJ" Units permit interchangeability with UNIPUNCH "A" Units and with *UNITS AND PARTS of OTHER LEADING MANUFACTURERS*

WITH PEDESTAL DIE
WITH DIE ADAPTER FOR DIE BUTTON

Unipunch "AJ" Hole Punching Units have the standard 8¾" shut height, and 3½" die height, plus ¼" thick mild steel capacity.

ALL-STEEL HOLDERS have longer life, higher tensile strength, longer wear and greater bearing surface than previously available.

Pedestal Dies are ideal for punching angles, extrusions, channels, and parts with lips and flanges.

Die Adapters provide quick interchangeability of standard ***inexpensive*** Die Buttons.

Write for FREE CATALOG AJ

FREE 20-page MAINTENANCE MANUAL

MAINTENANCE OF UNITIZED TOOLING

UNIPUNCH® PUNCH PRODUCTS Corporation
3808 HIGHLAND AVENUE
NIAGARA FALLS, N. Y.

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INTRODUCING THE PRECISION-BUILT
NON-MARRING STEEL LIFTING CLAMP

- Smooth ground jaws—no teeth
- Five to one gripping ratio
- Wedge screw finger adjustment

Where marring of stainless, copper, aluminum and other polished metals is a factor, we recommend the above clamp.

Write for full line catalogue

Safety Snap Lock

J. C. RENFROE & SONS, INC.
1926 SPEARING STREET • JACKSONVILLE, FLORIDA

▲ For more details circle NED-247 C on enclosed inquiry slip ▲

SEALINE
Hand Sealer
For Thermo-Plastic Films

SEALS BAGS - PACKAGES - STRAIGHT or IRREGULAR SHAPES

Ideal on Polyethylene and Pliofilm

New and Improved

- "Teflon" coated roller eliminates intermediate material or liquid Seals direct.
- Now available — AC or DC — 110V or 220V.
- Adjustable temperature control 200° to 450° F.
- Easy to handle — weighs less than 1 lb.

SEALINE Hand Sealer $23.90 f.o.b. Chicago

ORDER DIRECT
CENTURY ENGINEERING CO., Inc.
4720 W. Lake St., Chicago 44, Ill.

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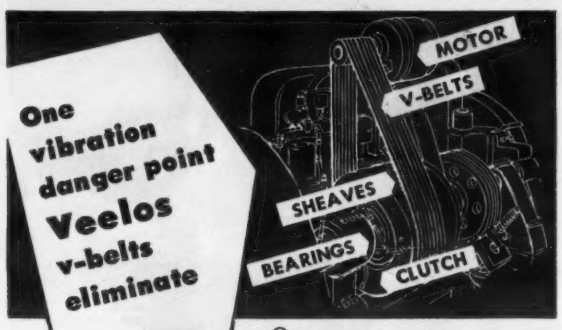
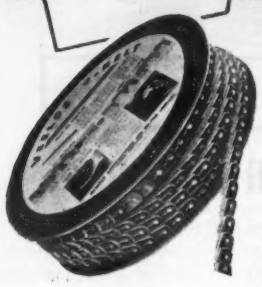




On any drive there are five vibration danger points—motor, bearings, clutch, sheaves and v-belts. One, the vibration from v-belts, can be eliminated by a simple switch to Veelos. An easy-to-make test with the Veelos Vibration Analyzer measures one belt against another. It will prove to you that Veelos cuts v-belt vibration up to 89% more than any other type of v-belt.

Ask your distributor—or write direct—to have a Veelos salesman demonstrate how vibration-free Veelos v-belts on your drives will bring higher production, higher quality output with less wear on bearings and machines.

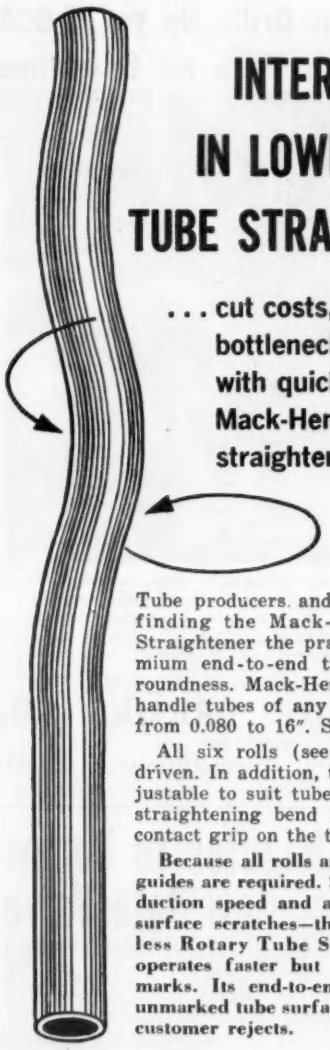
SEND FOR your free copy of the Veelos Data Book

VEELOS THE BALANCED LINK V-BELT

MANHEIM
Manufacturing & Belting Company
Manheim 4, Penna.

Veelos is known as Veelink outside U.S.A.

▲ For more details circle NED-249 C on enclosed inquiry slip ▲



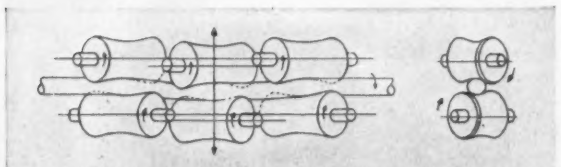
INTERESTED IN LOWER COST TUBE STRAIGHTENING?

. . . cut costs, delivery bottlenecks and rejects with quick, versatile Mack-Hemp rotary tube straighteners

Tube producers and processors alike are finding the Mack-Hemp Rotary Tube Straightener the practical answer to premium end-to-end tube straightness and roundness. Mack-Hemp straighteners will handle tubes of any alloy . . . in any O. D. from 0.080 to 16". Speeds up to 800 fpm.

All six rolls (see diagram below) are driven. In addition, the rolls are fully adjustable to suit tube diameter, amount of straightening bend required, and correct contact grip on the tube.

Because all rolls are driven, no interpass guides are required. Since guides limit production speed and are a major source of surface scratches—the Mack-Hemp Guideless Rotary Tube Straightener not only operates faster but also eliminates guide marks. Its end-to-end straightening, with unmarked tube surface, cuts inspection and customer rejects.



NO GUIDES NEEDED with Mack-Hemp straighteners. Drawing shows how identically-contoured opposed cross rolls—all driven—work. Tube revolves through the rolls spirally, thus all parts of tube in every plane are bend-straightened. Eliminating guides makes possible faster operation and ends major source of surface scratches.

For more information on specifications, dimensions, design data and typical examples of how leading tube producers and processors are using Mack-Hemp straighteners, write for 24-page bulletin "How to Straighten Pipe and Tube"

MACKINTOSH-HEMPHILL PITTSBURGH U.S.A. BLISS

MACKINTOSH-HEMPHILL
Division of
E. W. BLISS COMPANY
901 Bingham Street • Pittsburgh 3, Pa.

▲ For more details circle NED-250 C on enclosed inquiry slip ▲

NYLON AIR CYLINDERS
usable in corrosive atmospheres

Small pancake air cylinders with bodies of molded nylon can be used in corrosive atmospheres. Units withstand over 1500 psi test pressures. Small size adapts cylinder to light duty tooling for plastic and fiber machining, metalworking, machine tool setups, special fixtures, and transfer line units. Standard size has 1⅛-in. bore and 1:1 line pressure ratio. Stroke range is from 0.010 to ½ in. • **Fabco**, 1231 Main Ave., Cleveland 13, Ohio.

▲ For more details circle NED-251 C on enclosed inquiry slip ▲

OPEN MESH SHELVING
knock-down type supports 1000 lb

Free circulation of air around stored products to reduce the danger of spontaneous combustion is afforded by Erecta-Shelf open mesh shelving. Adaptable to practically any size or shape requirement, shelving assembles and knocks down easily without nuts, bolts, or special tools. It will support 1000 lb per shelf. • **Metropolitan Wire Goods Corp.**, N. Washington Street & George Avenue, Wilkes-Barre, Pa.

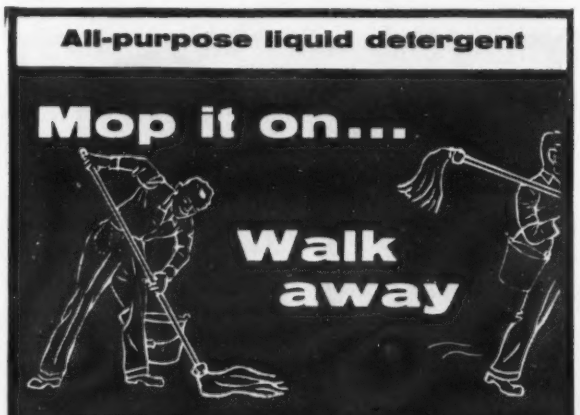
▲ For more details circle NED-252 C on enclosed inquiry slip ▲

ULTRASONIC CLEANER
cleans used filter elements

Hyperintense proximal scanning used by the Pall-Cavitron HIPS ultrasonic cleaner effectively cleans a small part of the surface of a used filter element at one time. Element is rotated until the entire surface is cleaned and original differential pressure and dirt-holding capacity is restored. Loosened particles are continuously flushed away. Equipment also includes a bubble-point tester to check the largest particle passed by the cleaned filter and measure the pressure drop of the filter element. • **Aircraft Porous Media, Inc.**, 30 Sea Cliff Ave., Glen Cove, N. Y.

▲ For more details circle NED-253 C on enclosed inquiry slip ▲

All-purpose liquid detergent



Cindet

Let Cindet suds lift the dirt for you

CINDET does more cleaning with less effort and less material; works in hard or soft water.

CINDET outstrips them all as a wax stripper. Cleans walls, woodwork, tile, porcelain, glass, metal.

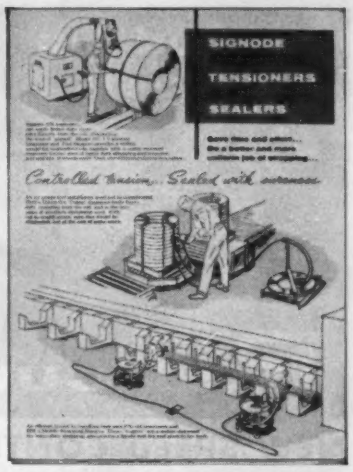
CINDET does a cleaner job—cuts labor costs: Mop it on, walk away, come back and pick it up.

CINDET does the job with no drag because dirt particles shatter, lift and ride high.

For free sanitary survey of your premises ask your Dolge service man

Specialists for DOLGE WESTPORT, CONNECTICUT

▲ For more details circle NED-254 C on enclosed inquiry slip ▲



FREE Booklet gives valuable details on Signode air power tensioners and sealers

This new Signode booklet tells how to save time and effort and do a better, more uniform job of steel strapping. It describes many of the ways in which air power strapping tools are serving industry. It gives useful data and descriptions of Signode's complete line of air power tensioners and sealers. Send for your free copy today.

SIGNODE STEEL STRAPPING CO.
2643 N. Western Avenue, Chicago 47, Illinois
Offices Coast to Coast
Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

▲ For more details circle NED-255 C on enclosed inquiry slip ▲

Cut fastening costs with PASLODE STAPLERS

On production lines: Used profitably in nearly every industry in manufacturing, assembly and shipping. Fasten wood, cloth, aluminum, hardboard, screen cloth, plywood and hard fibreboard.

In shipping rooms: Use to assemble cartons, drums, packing fillers, liners, etc.; to close bags, drums, corrugated containers; to fasten shipping tags, assembly instructions, moisture collectors.

There's a dependable Paslode hand or pneumatic stapler to help you cut costs. Send for description and prices today.

PASLODE COMPANY
Division of Signode Steel Strapping Company
5860 Northwest Highway, Dept. ED, Chicago 31, Ill.

▲ For more details circle NED-256 C on enclosed inquiry slip ▲

Model SN

Tension steel strapping quickly, accurately, easily with the right Signode portable air power tool

A Signode air power tensioning tool tightens steel strapping to the pre-set tension every time. There's a model that's just right for your needs. Every Signode tool is ruggedly built, easy and safe to use.

Model	For Strap Widths	Strap Tension at 90 PSI Air Pressure	Weight of Tool
SN	⅜", ½", ⅝"	750 lbs.	4½ lbs.
SPN	⅜", ½", ⅝"	750 lbs.	4¼ lbs.
N-1-34	¾" Waxed	1600 lbs.	7¾ lbs.
PN-114	¾", 1¼" Waxed	1600 lbs.	9 lbs.
FN-114	1¼" Waxed	3000 lbs.	19¼ lbs.
WN-114	¾", 1¼"	3300 lbs.	18¾ lbs.

10 ft. air hose and quick disconnect fittings furnished with each tensioner

Send for your free copy of booklet SPD 216, "Signode Air Power Tensioners and Sealers."

SIGNODE STEEL STRAPPING CO.
2643 N. Western Avenue • Chicago 47, Illinois
Offices Coast to Coast
Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co. Ltd., Montreal • Toronto

▲ For more details circle NED-257 C on enclosed inquiry slip ▲

NEW SPEED CONTROL VALVE

1/8" and 1/4" pipe sizes in stock now!

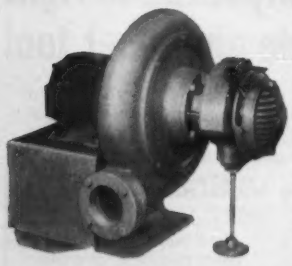
Now a speed control valve that regulates your cylinder movement with precision and sureness, but which lists at $3.00 and $3.25. And despite its lower costs, "CUB" features the same high quality of design and workmanship you've come to expect from Ross. "CUB'S" design stresses trouble-free operation and easy maintenance. CUB is small, aluminum and lightweight. If you use speed controls, by all means call your Ross representative or write us.

ROSS OPERATING VALVE CO.

161 E. Golden Gate Ave. • Detroit 3, Michigan

▲ For more details circle NED-258 C on enclosed inquiry slip ▲

FIRST and FINEST in COMBUSTION



Unimix Air/Gas Mixing Machines with easily preset gas orifices maintain constant gas-air ratio in all volumes and accurately repeat settings selected. The principle is foolproof — up to nine gas orifices in the manifold are simply uncovered, one at a time, as the air valve moves toward full-open position. Available with either manual or thermostatically controlled air-valve operation. Call or write for details.

Consult your Eclipse Combustion Expert — 38 District Offices to Serve You!

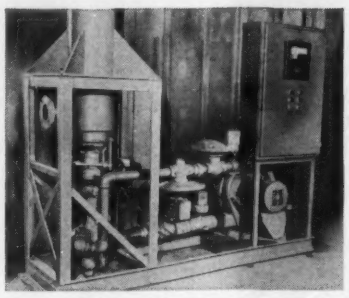
Eclipse Combustion Division

ECLIPSE FUEL ENGINEERING COMPANY

1128 Buchanan Street, Rockford, Illinois

▲ For more details circle NED-259 C on enclosed inquiry slip ▲

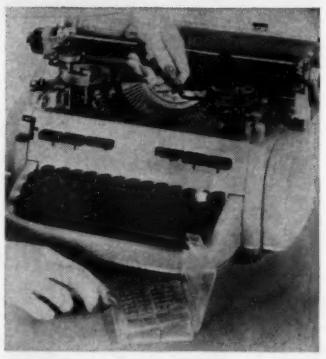
PREPACKAGED HEATER includes burner and safety controls



To reduce cost and installation time of Type 102 fired heaters, they are now made in prepackaged assemblies with combustion, flame safety, and automatic controls mounted, wired, and ready for operation. Used to heat a variety of gases, vapors, and liquids up to 1000° F, heaters range in capacity from 100,000 Btu per hr in a 2½-in. IPS tube to 1 million Btu per hr in a 10-in. IPS tube. They utilize a finned combustion tube which assures fast heat transfer to the customer's product. A variety of heater and panel positions is possible. Heaters require 115-v 60-cycle control power and 440-v, three-phase blower power. • **Brown Fintube Co.**, 300 Huron St., Elyria, Ohio.

▲ For more details circle NED-260 C on enclosed inquiry slip ▲

SYMBOL TYPEWRITER has interchangeable type bar



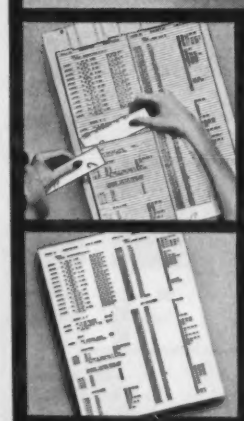
The Remington electric typewriter now includes as a standard feature at no extra cost an interchangeable type bar for scientific and specialized business typing. Typist, in a matter of seconds, can snap in special symbols for typing work in any one of 18 fields of science and business. Type head is changed with magnetized tweezers without mess or mechanical adjustments. Type faces are presently available for the fields of astronomy, biology, chemistry, commerce, electricity and electronics, engineering, languages, law, literature, mathematics, medicine, meteorology and oceanography, phonetics, physics, railroads and tariffs, research, shipping manifests, and weather. • **Sperry Rand Corp.**, Remington Rand Div., 315 Park Ave. S., New York 10, N. Y.

▲ For more details circle NED-261 C on enclosed inquiry slip ▲

Metal Etching Control Material

Eastman Kodak Co.—Kodak Metal-Etch Resist assists in accurate and economical control of the removal of superfluous and hard-to-get-at metal from in-process pieces through etching or chemical milling. It protects those areas where removal of metal is not required. Process, which makes use of a photographically prepared masking negative, is described in 16-page Pamphlet P-36.

▲ For more details circle NED-262 C on enclosed inquiry slip ▲



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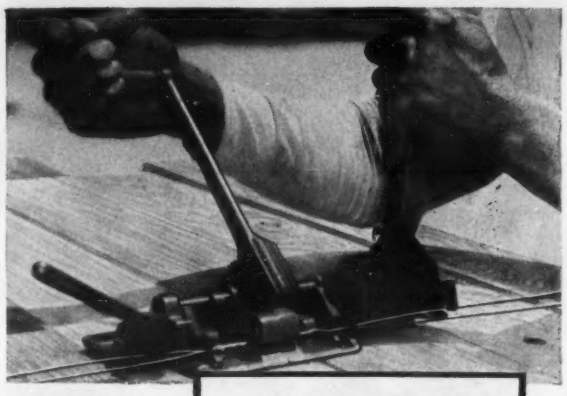


NOW!

Save 50-80% on strapping

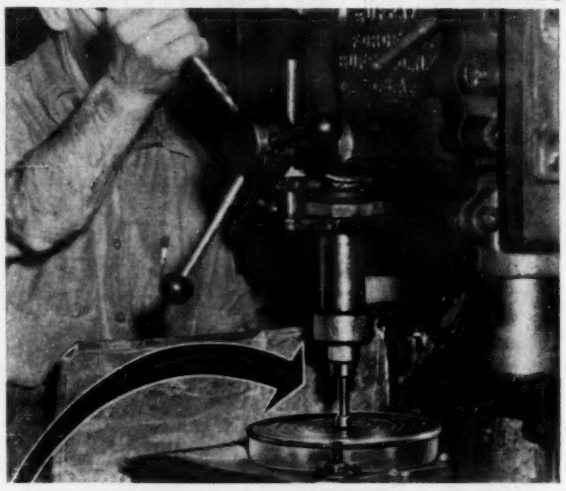
Twice as much for the money . . . Oval steel strapping gives you high tensile strength . . . a greater lineal feet per pound yield. Countless users have cut their strapping costs 50 to 80%. *Easier to use.* Just *one* tool to tension, twist and cut the strapping. You save time, manpower and equipment investment. *Full details.* Circle the reader service card, or write:

A.J. GERRARD & COMPANY / STRAPPING MATERIALS

1954 Hawthorne Blvd. • MELROSE PARK, ILLINOIS

▲ For more details circle NED-264 C on enclosed inquiry slip ▲

One Hoffman Bit Drills Up to 15,000 Godet Wheels With No Downtime



Up to 15,000 Godet Wheels drilled with center hole tolerance 1.5 min. to 1.53 max.—with one Hoffman Laboratory Bit. Actual production figures that are being duplicated by many Hoffman Bit users for precision drilling of glass, ceramics, quartz, etc. Diamond impregnated or oriented surface set.

Write for Illustrated Literature and Prices—FREE

HOFFMAN BROS. DRILLING CO.

SINCE 1902

106 Cedar Street PUNXSUTAWNEY, PENNA.

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Only 7 to 10 Minutes to Renew Service Life of New Gate Valve

Replace seat rings in Fairbanks patented Renewable Seat Ring Gate Valves without removing valve body from line.

For the first time in valve history, you can replace the seat rings in a renewable seat ring gate valve, under all normal conditions, in less than 10 minutes, using just a screw-driver and *with the valve body still installed in the line* through an exclusive and patented development of The Fairbanks Company.

Fairbanks new 200 pound steam working pressure gate valves, available in sizes ½" through 2" in the rising and non-rising stem construction, have been field tested for over two years under all conditions from steam to corrosive liquids and have proven completely satisfactory—absolutely dependable.

FREE: Brochure, complete with details and specifications, yours without charge. Write today.

® THE Fairbanks COMPANY

393 Lafayette Street, New York 3, N. Y.

Branches: New York 3 • Boston 10 • Pittsburgh 22 • Rome, Georgia

Valves • Trucks • Casters • Wheels • Dart & "PIC" Unions

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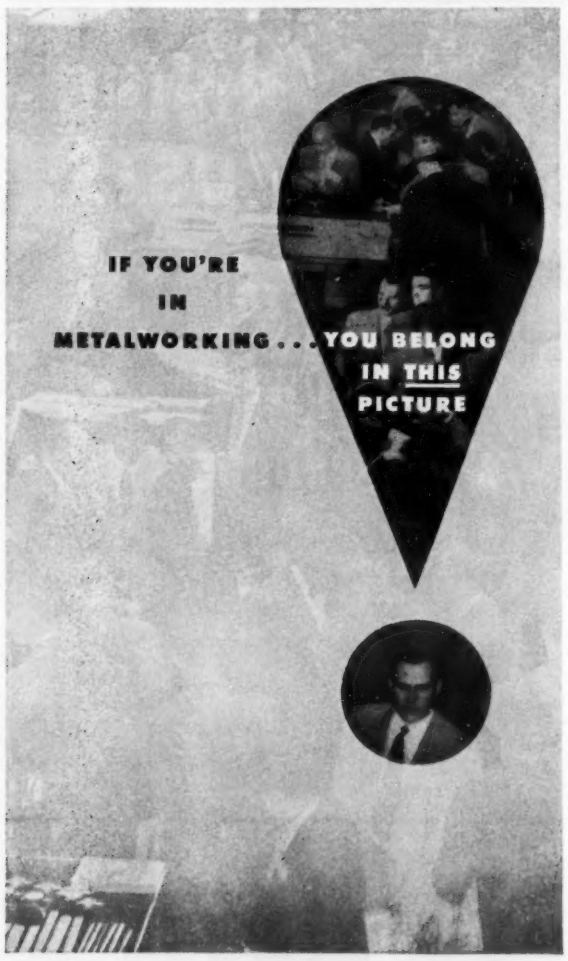
AIR REGULATOR accurately controls pressures to 135 psi

DeVilbiss Air Pressure Regulator offers extreme accuracy wherever controlled air pressure is needed. Regulates pressures up to 135 lbs. with only ½-lb. variation for each 10-lb. fluctuation in main line pressure! Two stage control provides easy knob setting, sensitive regulation, less pressure drop. Compact size. Fingertip adjustment. No large, heavy springs. Two inlets and three outlets allow for any type of installation. See your supplier, or write for Form I-4001.

DEVILBISS

THE DEVILBISS COMPANY
Toledo 1, Ohio
Branch Offices in Principal Cities

▲ For more details circle NED-267 C on enclosed inquiry slip ▲



The 1960 TOOL SHOW and CONFERENCE

DETROIT ARTILLERY ARMORY
APRIL 21st THRU 28th

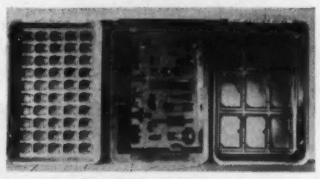
The nation's foremost forum for the advancement of scientific knowledge in the field of tool engineering

for rapid registration forms write:
AMERICAN SOCIETY OF TOOL ENGINEERS
10700 PURITAN AVENUE
DETROIT 38, MICH.

THE AMERICAN SOCIETY '60 OF TOOL ENGINEERS

▲ For more details circle NED-268 C on enclosed inquiry slip ▲

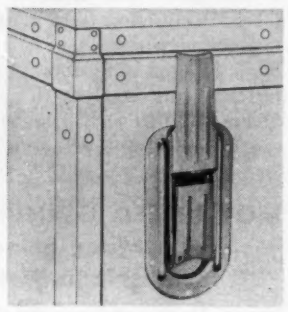
PLASTIC TOTE TRAYS with cavities to fit any shape



Plastic tote trays with cavities to fit any shape or multiple of shapes are available without any die or mold costs. Standard trays include units with egg crate dividers from 1-in. square to full box size, as well as units made from high impact linear polyethylene, velour covered Styrene, and high impact and oil resistant Cycolac. Practical in degreasing operations, trays will not splinter or become oil soaked and withstand continual washing and drying. • **Patti-Plastics Corp.**, 36 Legal St., Newark 12, N. J.

▲ For more details circle NED-269 C on enclosed inquiry slip ▲

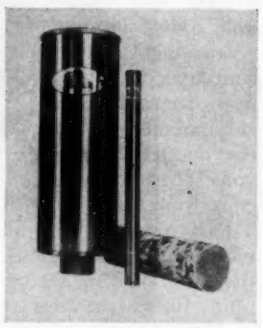
SPRING-LOADED CATCH seals with 200-lb force



Ribbed construction of the Clench spring - loaded catch for cases, chests, and similar enclosures enables it to withstand force from any angle. It is preloaded at only 35 lb, yet has a sealing force of 200 lb which suits it for use with rubber or synthetic waterproofing gaskets. Mounted dish illustrated has a crimped edge for positive seal against the gasket. Catch is also offered without the dish for surface mounting. Both types have provision for insertion of a pilferage seal and are operated with one hand. • **J. H. Sessions & Son**, 289 Riverside Ave., Bristol, Conn.

▲ For more details circle NED-270 C on enclosed inquiry slip ▲

THIN-WALL DIAMOND BITS speed drilling in masonry



Fast drilling through such materials as reinforced concrete is possible with this line of tubular Thin Wall diamond bits. Typical uses include drilling holes for pipe and wiring, core sampling, and maintenance operations. Typical of speed was a test drilling of a 4-in. diameter hole through 1 ft of reinforced concrete in 5 min. Diameters range from 1¼ to 14 in. and core lengths of 4½, 12, and 18 in. Types include whole diamond first quality resettable; impregnated, with diamond cutting particles in a tough bonded matrix; and whole diamond second quality throwaway bits. • **J. K. Smit & Sons, Inc.**, Murray Hill, N. J.

▲ For more details circle NED-271 C on enclosed inquiry slip ▲

THERMO-FAX COPYING MACHINES

FOR COMPLETELY CLEAN COPYING

Here's a clean, dry copying method that uses no chemicals, no negatives. Instead "Thermo-Fax" Copying Machines operate completely by electricity. You get a perfectly dry copy directly from an original in just 4 seconds. Copies are made on white, bond-weight paper—or on any of 6 other colors. See a demonstration soon.

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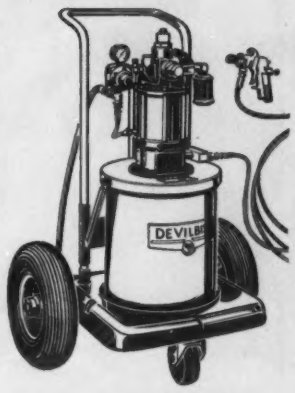
AIRLESS SPRAY paints big areas fast



DeVilbiss brings you the latest refinements in airless spraying with this new portable outfit. Even heaviest materials can be sprayed with utmost speed giving you a full, even, wet coat for best possible appearance and protection.

DeVilbiss airless spray outfit may be equipped with one or two high-production guns. Delivers from 5- or 10-gallon pail. Specially engineered pump gives long, dependable service. Pump models for 55-gallon drums also available. Call your nearest DeVilbiss supplier, or write: The DeVilbiss Company, Toledo 1, Ohio.

FOR TOTAL SERVICE, CALL
DEVILBISS

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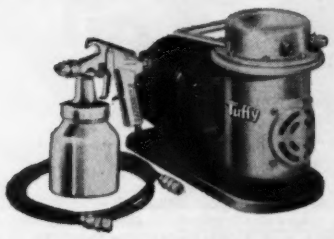
Low-cost SPRAY OUTFIT makes short work of small paint jobs around the plant



Now you can complete those one- and two-hour paint jobs in a matter of minutes with the low-cost, highly portable DeVilbiss Tuffy Spray Outfit.

Tuffy outfit plugs in anywhere; takes the high cost out of painting machinery, gratings, grilles; ideal for touch-up and service jobs.

Complete outfit includes rugged compressor, built of heavy-gauge steel, mounted on rigid steel base; spray gun with cup; and 12′ air hose. Available with or without 1/3-hp motor.

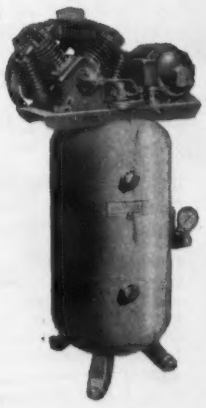
Write for details.

THE DEVILBISS COMPANY
Toledo 1, Ohio
Branch Offices in Principal Cities

DEVILBISS

▲ For more details circle NED-274 C on enclosed inquiry slip ▲

AIR COMPRESSORS that use less electric current



DeVilbiss Compressors —with greater finned cooling area—deliver low-temperature, less-expanded air to the tank. Result: less air shrinkage in the tank, less frequent running cycles, longer service with lower power consumption.

The hotter a compressor delivers air to the tank, the greater the shrinkage when it cools. This means more running cycles are necessary for a given air demand.

Send for catalog C-51, or call the local DeVilbiss man for facts on DeVilbiss Compressors—¼ to 25 hp.

DEVILBISS

THE DEVILBISS COMPANY
Toledo 1, Ohio
Branch Offices in Principal Cities

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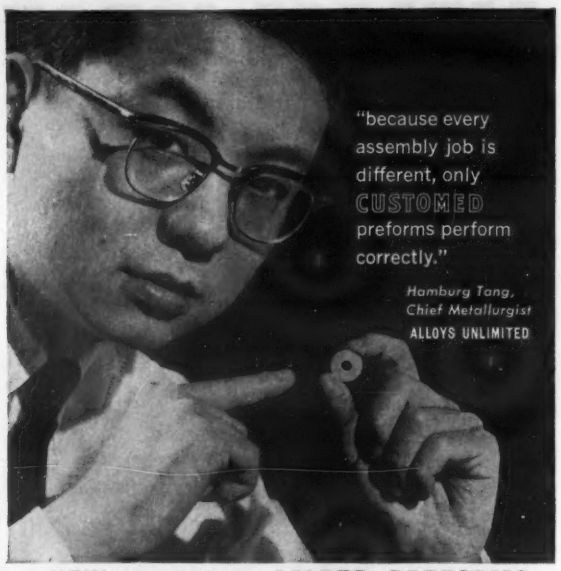

NEW CUSTOMED SOLDER PREFORMS IMPROVE AUTOMATIC SOLDERING

New customed preforms consist of an accurately predetermined amount of a specific alloy. The proper melting temperature and correct volume of solder are assured. Labor costs are lowered. Production increases. Scrap is eliminated. Get the facts today! Write for 8 page Guide to Preform Soldering.

21-01 43rd Ave., Long Island City 1, N. Y.

ALLOYS UNLIMITED INC

▲ For more details circle **NED-276 C** on enclosed inquiry slip ▲

Cut costs in many applications. In this die the pins position laminated sections, but many plants use them as plug and feeler gages, valves and valve plungers, wrist pins, hinges and shafts.

Precision UNBRAKO Dowel Pins cut costs in many applications

- Diameter tolerance of ±0.0001 inch
- Consistently uniform physical characteristics: Rockwell scale, R_c 62 min. surface hardness, R_c 50-54 core hardness, 150,000 psi average shear strength
- Two types: Blue Label Pins, .0002 inch oversize for nominal press fit requirements; Red Label Pins, .001 inch oversize for use as repair pins
- Sizes from 1/16 through 1 inch in a range of lengths

See your nearest authorized distributor. Or write SPS—manufacturer of precision threaded industrial fasteners and allied products in many metals, including titanium.

INDUSTRIAL FASTENER Division **sps**

JENKINTOWN 24, PENNSYLVANIA

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PAYS FOR ITSELF . . .

CONTROLLED HUMIDITY

WITH LOW-COST WATER OR STEAM

Bahnson UNIT HUMIDIFIERS

Guaranteed Units Insure Quality, Reduce Storage and Production Problems

Full line includes 14 units in various sizes, capacities for your needs, any size area. Units have low first cost, low operating cost, automatic controls. Easy to install from ceilings or on walls.

TYPE E

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Clip Coupon to Letterhead and Mail Today! Catalog details complete line of 14 humidifiers for your needs, any size area.

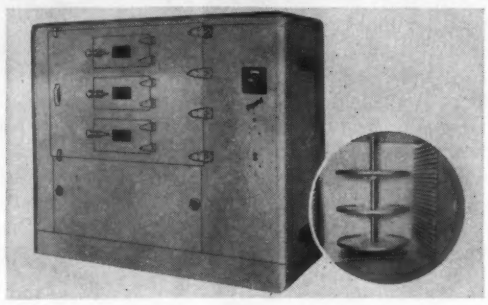
NAME _____

THE BAHNSON COMPANY
N-7 WINSTON-SALEM, N. C.

▲ For more details circle **NED-278 C** on enclosed inquiry slip ▲

LABORATORY OVEN with gas, electric, or steam heat

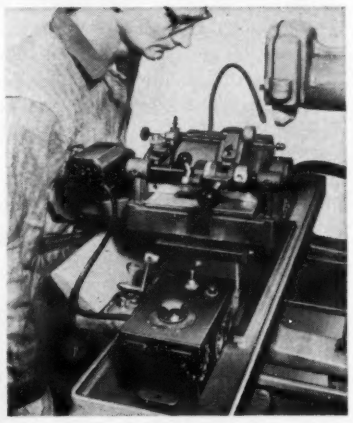
Rotary shelves, either manually or mechanically operated, are spaced on 12-in. vertical centers in line of laboratory ovens. Manually operated shelves are suited



for use below 300° F, and motor and reduction gear operated shelves are for temperatures up to 850° F. Ovens have gas, electric, or steam heat and utilize forced convection with horizontal air flow. Heat uniformity is within ±1° C throughout the work chamber. Hinged plug doors located in one main door are on the same level as the rotary shelves. ● **Despatch Oven Co.**, 619 S. E. Eighth St., Minneapolis 14, Minn.

▲ For more details circle **NED-279 C** on enclosed inquiry slip ▲

MOTORIZED GRINDING FIXTURE for surface grinders, allows form grinding of cylindrical parts



Through feed or form grinding of cylindrical parts with conventional surface grinders is made possible by the Mini-Grind fixture. An unusual outside diameter driving and adjustable roller clamping arrangement assures concentricity. It produces step or spherical diameters or tapers on punches, valves, core pins, or related cylindrical parts with diameters from 0.005 to 3 in.

Part rests on large-diameter abrasive-surfaced drive wheel and is positioned with a carbide rest blade at the back and a spring-loaded nylon-faced roller on top. Roller provides the clamping function. Spray coolant system and wiper keeps drive wheel free of metallic particles and dirt. Fixture weighs about 40 lb and has steel inserts in the base of its aluminum alloy frame for magnetic chucking on machine worktables. ● **Products Supply Co.**, 1178 Woodward Heights Blvd., Ferndale 20, Mich.

▲ For more details circle **NED-280 C** on enclosed inquiry slip ▲

Want to Cut **DRILLING COSTS?**

Get

INCREASED PRODUCTION | IMPROVED QUALITY | LONGER TOOL LIFE

with a **Bellows**

DRILL PRESS FEED

Automatic or semi-automatic feeding of drill press spindles is practical for short runs as well as long. The Bellows Drill Press Feed is quickly attached to the star wheel shaft of any drill press, requires but a simple touch on the starting control handle to operate; features "Controlled-Air-Power" rapid advance and retract, and a precision hydraulic feed which is quickly adjustable to any tool, any material. Can be moved from one drill press to another in minutes.

Write today for free Bulletin DF 110R. Address Dept. NED-360

The Bellows Co.
DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)
AKRON 9, OHIO 637-C

OTHER INDUSTRIAL DIVISIONS OF IBEC: Sinclair-Collins Valve Co., Valvair, Akron, Ohio; V. D. Anderson Co., Cleveland, Ohio.

▲ For more details circle **NED-281 C** on enclosed inquiry slip ▲

FLAMELESS BLOW TORCH

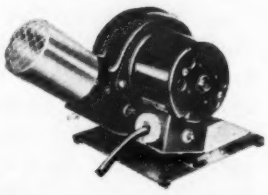
FOR QUICK HEAT UP TO 1000° F.

For applications requiring quick concentrated heat blast up to 1000° F. without flame. Soften, form, mold and patch plastics, etc. Temperature varied by air intake adjustment. 110-120 V. AC-DC motor, 8 ft. heavy duty cord. Intermittent duty. $37.50.

Other models available with lower temp. ranges

Most of the big names in industry use MASTER in laboratories or in production

AIR HEATER BLOWER



For quick electrically heated air up to 500° F. For accelerating drying processes or for localized heating. B.T.U. 3400. Air velocity 2000 FPM. 110-130 V. AC only. 8 ft. heavy duty cord. Continuous duty. 2" dia. x 3" long discharge nozzle.

Order through your local laboratory or industrial supplier or direct.

300° F.—1000 Watts $37.50
500° F.—1400 Watts $39.50

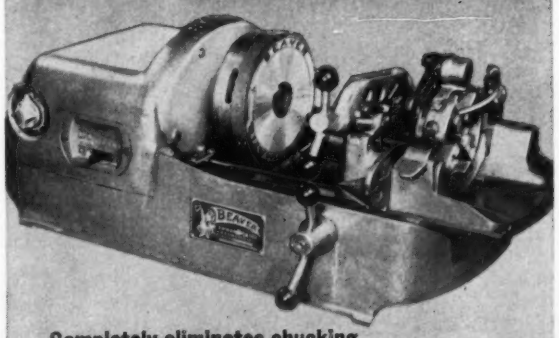
MASTER Appliance Corp., Racine, Wisconsin

▲ For more details circle **NED-282 C** on enclosed inquiry slip ▲

STOP RISING COSTS!

MORE SPEED! + MORE POWER! = MORE PRODUCTION!

THE NEW BEAVER SPEED-O-MATIC PIPE and BOLT MACHINE with the NEW BEAVER ELECTRIMATIC CHUCK!



Completely eliminates chucking time. Grips "electrimatically" the instant you flip the switch.

THE NEW EXCLUSIVE BEAVER ELECTRIMATIC CHUCK

Threads 1/8" to 2" pipe!

Threads 1/4" to 2" bolts!

BEAVER *Send for complete catalog and name of nearest distributor*

PIPE TOOLS, INC.
DANA AVE.
WARREN, OHIO

▲ For more details circle **NED-283 C** on enclosed inquiry slip ▲

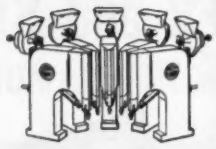
● Available in two air-driven models that quickly and conveniently convert from screwdriver to nutsetter. Each model features fast, easy, automatic push-starting for increased production and lower operating costs. Models with either adjustable or positive clutch for operation at 1100 or 3000 rpm. For complete information on these important new products in the complete line of Airetool pneumatic production tools, write today for Bulletins.

AIRETOOL MANUFACTURING COMPANY SPRINGFIELD, OHIO

REPRESENTATIVES in principal cities of U. S. A., Canada, Mexico, South America, England, Europe, Puerto Rico, Italy, Japan, Hawaii.
EUROPEAN PLANT: Vlaardingen, The Netherlands.
CANADIAN PLANT: Brantford, Ontario.

▲ For more details circle NED-284 C on enclosed inquiry slip ▲

NEW "BUILDING BLOCKS" for automatic riveting



Milford's Models 56 and 57 offer unlimited flexibility in automatic assembly

Group these new "Building Blocks" to suit your production needs. Use them singly, in pairs, in threes, fours or even fives. Write for more information on multiple riveting, the newest answer to reducing assembly costs.

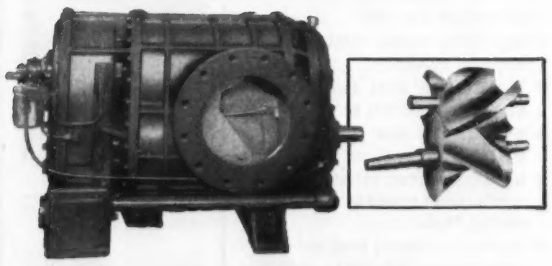
For more new ideas, tips and technical data on tubular rivets and rivet-setting machines, ask your Milford Representative for a look at Milford's new MANUAL OF MODERN RIVETING PRACTICE.

THE MILFORD RIVET & MACHINE CO.

MILFORD, CONN. • HATBORO, PENN. • ELYRIA, OHIO • AURORA, ILL. • NORWALK, CALIF.

▲ For more details circle NED-285 C on enclosed inquiry slip ▲

AXI-COMPRESSORS



AIR, GAS OR VAPOR PROBLEMS?

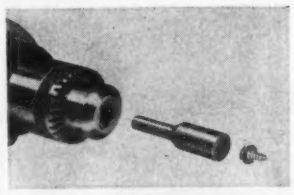
If you are interested in compressor efficiency for handling air, gas or vapor, investigate the I-R AXI-COMPRESSOR line. With unique axial-flow cycloidal design, the rotors never touch . . . need no internal lubrication . . . deliver oil-free air. More air with less power consumption. Sizes range from 100 cfm to 15,000 cfm, for vacuums to 25 inches, pressures to 15 psi. Details in Bulletin 11,001.

Ingersoll-Rand
17-662 11 Broadway, New York 4, N. Y.

Over 1000 types and sizes of I-R compressors . . . 1/4 to 6000 hp.

▲ For more details circle NED-286 C on enclosed inquiry slip ▲

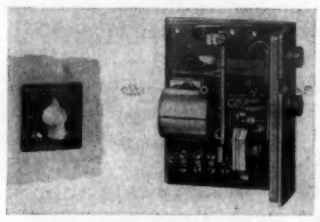
SHEET METAL SCREW
drills its own hole in metal



Ability to penetrate and engage securely in sheet metal without using a predrilled or punched hole is designed into the Drill Screw, a sheet metal fastener that drills its own hole. It is driven by a standard 1/4-in. high speed electric drill equipped with a magnetic hex socket. Screw can also be driven manually. It is offered in No. 6-3/8 in.; No. 7, 8, and 10-1/2 in.; and No. 10-3/4 in. sizes. Samples are available. ● **Duro-Dyne Corp.**, Route 110, Farmingdale, L. I., N. Y.

▲ For more details circle NED-287 C on enclosed inquiry slip ▲

LOAD LIMITING RELAY
protects against motor overload

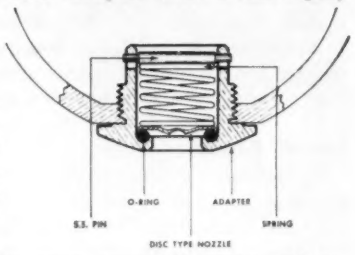


Usable with pneumatic control systems, the R-27 load limiting relay is applicable to all types of centrifugal refrigeration compressors. Installed in the pneumatic control circuit and responding to motor current, relay limits the opening of the capacity regulating inlet valves or dampers to maintain a predetermined motor current regardless of the demands of other controllers. Remotely located manual adjuster limits motor current to any value between 40 and 100 per cent of the maximum. Relay operates at any current between 3 and 7 amp and, with proper transformer, can be applied to motors of any size. ● **Johnson Service Co.**, 507 E. Michigan St., Milwaukee 1, Wis.

▲ For more details circle NED-288 C on enclosed inquiry slip ▲

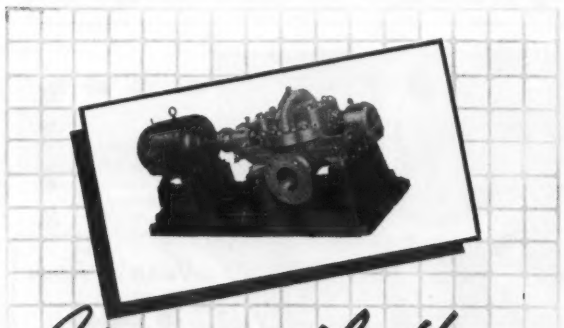
SHOWER NOZZLE
gives fan, cone, or needle spray

Simple disc-type design of the Econo-Miser fresh water shower nozzle allows fast, easy nozzle changes. It consists of threaded brass adapter with a thin spray disc that is held firmly in operating position by light spring tension. Adapter screws in or out of pipe readily for quick changing. Discs are available with orifice sizes for any desired volume.



Nozzle produces a fan, cone, or needle spray and operates at pressure up to 300 psi. ● **Lodding Engineering Corp.**, Auburn, Mass.

▲ For more details circle NED-289 C on enclosed inquiry slip ▲



You specify the TEMPERATURE and Ingersoll-Rand will specify the PUMP

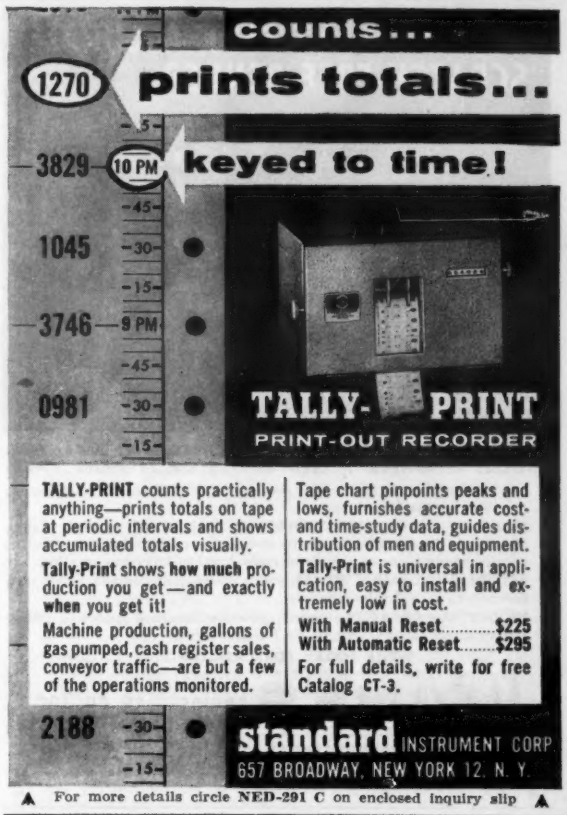
10-973

From the world's most *complete line* of centrifugal pumps, I-R engineers can select the one that meets your exact requirements to *best advantage.*

Ingersoll-Rand
11 Broadway, New York 14, N. Y.

PUMPS • COMPRESSORS • DIESEL ENGINES • AIR & ELECTRIC TOOLS
TURBO BLOWERS • CONDENSERS

▲ For more details circle NED-290 C on enclosed inquiry slip ▲



TALLY-PRINT counts practically anything—prints totals on tape at periodic intervals and shows accumulated totals visually.

Tally-Print shows how much production you get—and exactly when you get it!

Machine production, gallons of gas pumped, cash register sales, conveyor traffic—are but a few of the operations monitored.

Tape chart pinpoints peaks and lows, furnishes accurate cost- and time-study data, guides distribution of men and equipment.

Tally-Print is universal in application, easy to install and extremely low in cost.

With Manual Reset.....$225
With Automatic Reset.....$295

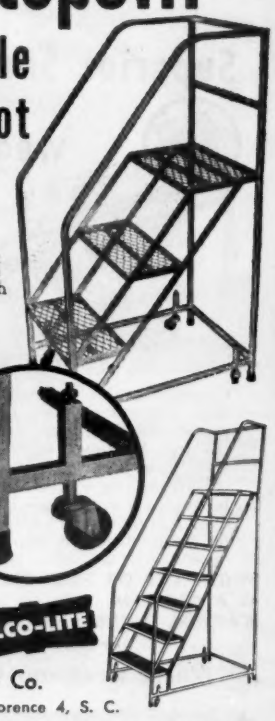
For full details, write for free Catalog CT-3.

standard INSTRUMENT CORP.
657 BROADWAY, NEW YORK 12, N. Y.

▲ For more details circle NED-291 C on enclosed inquiry slip ▲

Roomy steps...

Easy to handle
Solid underfoot



Alco-Lite 1 to 12 Step all-steel Ladder Stands

Welded SQUARE tubular steel construction. Non-slip type treads. Roll with gentle push. Sit solid on floor in use. Entire unit finished with rust-resistant coating. FREE CATALOG.

ALCO-LITE

Aluminum Ladder Co.
W. Darlington St. Ext. Florence 4, S. C.

▲ For more details circle NED-292 C on enclosed inquiry slip ▲

AIR-COOLED, HIGH PRESSURE AIR COMPRESSORS

Air-cooled units to 25 hp with pressures to 5000 lbs., other I-R high pressure compressors to 7500 hp, pressures to 35,000 lbs.

DESIGNED SPECIFICALLY for high pressure operation, these Ingersoll-Rand Air Compressors are available in a wide variety of sizes and types. I-R High Pressure Air Compressors have been engineered for dependable, economical operation in thousands of installations such as air blast circuit breakers, air starting of engines, test stands for valves, accumulator service and many others.

For complete information see your local I-R representative or distributor—or write today for new folder with helpful selection data.

Ingersoll-Rand
93A-3 11 Broadway, New York 4, N. Y.

▲ For more details circle NED-293 C on enclosed inquiry slip ▲

DO YOU WANT FAST, ACCURATE SCRATCH-FREE BENDS?

Dan Smith, Shop Supt. at Columbus Stamping and Mfg. Co., Columbus, Ohio, says: "Bends fast . . . never scratches prepainted tubing . . . no maintenance in three years."

FAST, VERSATILE MODEL 1400 BENDS TUBING, BARS, PIPE, ANGLES, CHANNELS, ROLLED SHAPES OR EXTRUDED PARTS

- **SAVES TIME, CUTS COSTS** — on production, experimental, maintenance or small lot bending jobs.
- **ELIMINATES WORKPIECE INTERFERENCE**—on jobs with multiple planes, odd shapes. Pivoting top assembly and double tool holder ways on arms permits two-minute change from right-hand to left-hand bending.
- **ACCURATE HYDRAULIC POWER**—with convenient controls bends consistently to ± ½° tolerance.
- **PRODUCTION CAPACITY**—smooth, low-cost bends at speeds of 300 to 400 an hour; material up to 1¼" O.D. tubing.

WRITE TODAY FOR CATALOG 356

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery 640 WALNUT • AURORA, ILLINOIS

PRODUCTION BENDING • DEBURRING • CHAMFERING MACHINERY

▲ For more details circle NED-294 C on enclosed inquiry slip ▲

MINNESOTA RUBBER

KAPSEAL®

Superior Sealing with less wear and friction

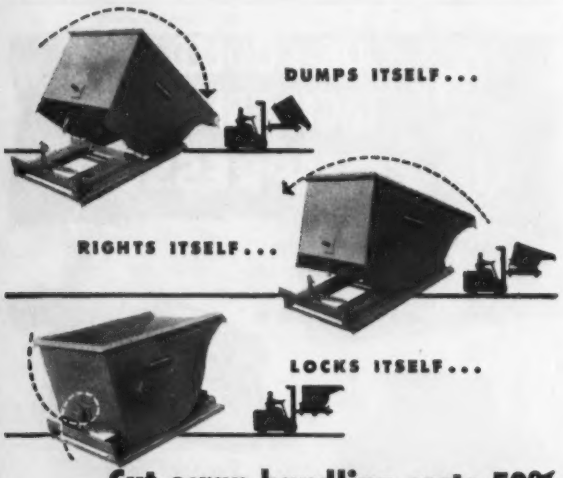
Combining the Teflon KAPSEAL twins KIN and KEX with a standard O-ring gives improved sealing with longer life, lower breakout friction and lower running friction. KIN seals on the ID while KEX seals on the OD. This permits use of a KAPSEAL in any sealing situation. Use of the KAPSEAL improves O-ring performance immensely—Lab and field tests have logged over 5,200,000 cycles and they are still going strong on many different applications.

WHERE LIFE OR FRICTION IS A PROBLEM, KAPSEAL IS THE ANSWER

For more information,

WRITE DEPARTMENT 639 3630 WOODDALE AVENUE MINNEAPOLIS 16, MINNESOTA

▲ For more details circle NED-295 C on enclosed inquiry slip ▲



Cut scrap handling costs 50%

Hundreds of industries are now using Roura Hoppers instead of barrels or tote boxes to collect scrap metal. They're placed alongside machines or in strategic locations. When full, lift truck operator picks up loaded hopper . . . transports it to scrap bin or freight car . . . flips the latch . . . and the hopper automatically dumps its load, rights itself, locks itself.

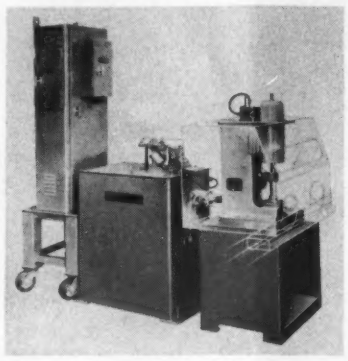
Roura Hoppers are made in five sizes, ½ to 2 yard capacities. Built of ⅛" steel plate with continuous arc-welded seams. Also available in stainless steel or galvanized. Mounted on live skids or a choice of wheels. Standard models available for immediate shipment.

Write today for more information. ROURA IRON WORKS, INC. 1415 Woodland Avenue, Detroit 11, Michigan.

ROURA *Self-Dumping* **HOPPER**

▲ For more details circle NED-296 C on enclosed inquiry slip ▲

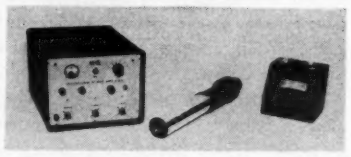
CONTROLLED ATMOSPHERE WELDER gun fits into standard dry boxes



Precision C-type magnetic force welding gun fits easily into standard controlled atmosphere boxes for welding semiconductors and other small electronic parts. Air, water, and electrical supply lines are carried to the electrodes inside the hollow C-frame. The most popular size develops 2200-lb weld pressure and accommodates transistor assemblies having ring projection diameter up to 1.250 in. The same current surge that heats the weld area exerts magnetic force on the electrodes for forging the weld. Forge occurs at the exact moment of maximum ductility. • **Precision Welder & Flexopress Corp.**, 3520 Ibsen Ave., Cincinnati 9, Ohio.

▲ For more details circle NED-297 C on enclosed inquiry slip ▲

ELECTRONIC COLLIMATOR measures reflective surface angle with sensitivity near 1/50 second



Tilt of a reflective surface is measured by this electronic Auto-Collimator with respect to the instrument's axis. Instrument will check flatness of surface plates, monitor drift of gyros, check straightness of machine tool ways, and check run-out of precision bearings. It reads angles directly to 1/50 sec. Sensing unit has indicating range of 50 sec, ±25 sec, with working distance up to 30 ft between sensor and reflecting surface.

Output from 115-v 60-cycle, 150-w power amplifier is suitable for chart recording and, after amplification, for servo-system feed. Linear output voltage is ±15 v dc for the full scale. Sensitivity ranges of ±1, 10, and 25 sec can be selected. Power amplifier is connected to indicator by 50 ft of cable, with up to 2000 ft available. • **Keuffel & Esser Co.**, Optics and Metrology Div., Third & Adams Streets, Hoboken, N. J.

▲ For more details circle NED-298 C on enclosed inquiry slip ▲

Speed Reducers

Philadelphia Gear Corp.—Construction and mechanical features of motor reducers in eight housing sizes for applications up to 125 hp and speeds of 9 to 420 rpm are summarized in Catalog MR-58. Included in its 28 pages are a selection guide, load characteristics, ratings, and mounting dimensions. Speed reducers described are used in blowers, conveyors, cranes, elevators, mills, mixers, and other equipment.

▲ For more details circle NED-299 C on enclosed inquiry slip ▲

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close **MULTIWALL PAPER BAGS**

FOR lower production costs ... stronger, neater closures ... ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 416 North Franklin Street, Chicago 10, Illinois

Union Special®

▲ For more details circle NED-300 C on enclosed inquiry slip ▲

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Other models available

WEBSTER INSTRUMENTS, INC. Dept. N, 11856 Mississippi Ave. Los Angeles 29, California

▲ For more details circle NED-301 C on enclosed inquiry slip ▲

GPE Controls

WEB and STRIP GUIDES

Save TIME...MONEY...MATERIAL!

Send for NEW Catalog EG-84

Photos and diagrams representing thousands of installations; complete details on world's broadest line of web and strip guides.

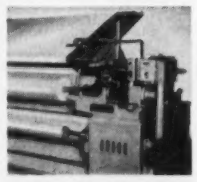
- Laminate without trim!
- Speed up presses while you keep accurate side register!
- Slit without side trim!
- High-speed textile tentering with minimum selvage.
- Track conveyor belts, abrasive belts, etc., up to 5,000 feet per minute.
- Winds 100-ton steel coils evenly to protect edges.
- Web edge position, porosity, opacity, or reflectance sensed by air or photoelectric heads.
- Non-clog air sensing head (patented) never touches web, works perfectly with linty, dusty, or abrasive webs.
- Hydraulic actuation for unlimited power and speed, high frequency response.
- Engineered by specialists in industrial automatic controls.

GPE Controls, Inc.
258 E. Ontario St., Chicago 11, Ill.

43 MODELS ...one just right for your job!

Medium-duty model with air sensing, positioning knives on rubber calender.

Photoelectric reflected light head following line on printed carton stock to eliminate slitting.

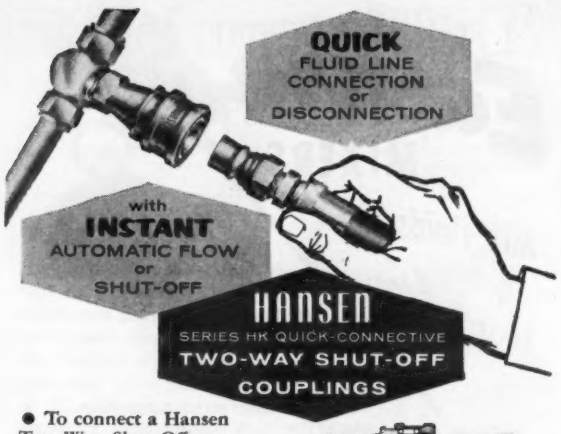


Light-duty unit with air sensing, applied to textile machinery.

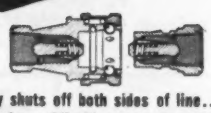
GPE Controls — A GENERAL PRECISION COMPANY — formerly Askania Regulator Company

A subsidiary of General Precision Equipment Corporation

▲ For more details circle NED-302 C on enclosed inquiry slip ▲



● To connect a Hansen Two-Way Shut-Off Coupling, you merely pull back the sleeve on the Socket and push in the Plug. To disconnect, just pull back the sleeve. Available in brass or steel with female pipe thread connections from 1/8" to 1" inclusive.



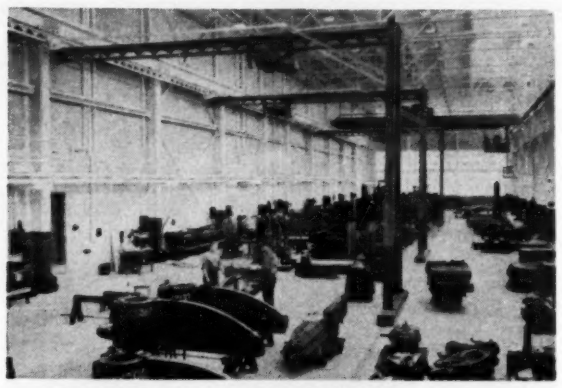
Instantly shuts off both sides of line... prevents loss of liquid, gas or pressure.

Write for the Hansen Catalog . . . a ready reference when you want information on couplings in a hurry.

Representatives in Principal Cities

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 35, OHIO

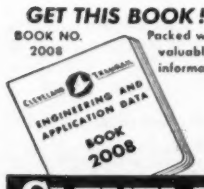
▲ For more details circle **NED-303 C** on enclosed inquiry slip ▲



SINGLE LEG GANTRIES . . .
Little Cranes that Speed Production

Skilled workers often wait five or ten minutes and more for crane service. By providing a sufficient number of gantry cranes, much or all of this lost time can be eliminated and production aided. Gantry cranes are inexpensive; several can usually be purchased for less than the price of an additional large overhead crane and far better handling service provided.

GET THIS BOOK!
BOOK NO. 2008 — Packed with valuable information



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CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6613 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

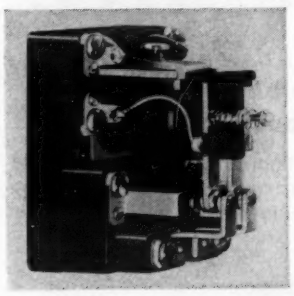
▲ For more details circle **NED-304 C** on enclosed inquiry slip ▲

ROTARY SPRINKLER
covers circular or angular areas

Built with only three moving parts, the Model 56 Rain-rite rotary sprinkler will water a 42-ft radius circle with 50-psi water pressure. Settings to permit watering any portion of this circle, including small acute triangles. It will operate on up to 70-psi and can be used on a portable base attached to a garden hose. The brass sprinkler is offered with any of four nozzle sizes. Chrome-plated brass model is $6.35, brass model is $6 and no-rock base is $3.50. ● **Campbell's Mfg. Co.**, 446 N. La Cienega, Los Angeles 48, Calif.

▲ For more details circle **NED-306 C** on enclosed inquiry slip ▲

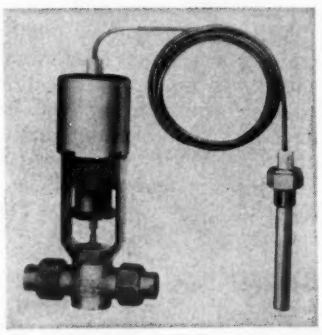
POWER RELAY
starts motors up to 1 hp



Series ST Power relay, presently available only in double-pole double-throw models, is suited for starting motors up to 1 hp, elevator controls, and for other high current or high voltage switching uses. It has one-piece molded base construction and gold-flashed fine silver, 5/16-in. diameter contacts rated 15 amp at 115 v ac. Relay is offered in 6 to 110 v dc and up to 440 v ac ratings. ● **Line Electric Co.**, 271 S. Sixth St., Newark 3, N. J.

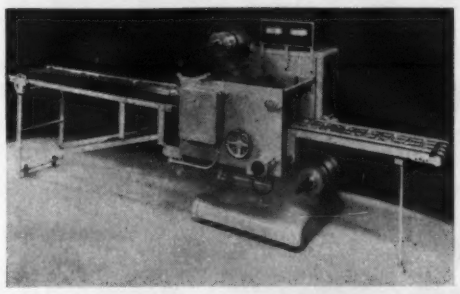
▲ For more details circle **NED-307 C** on enclosed inquiry slip ▲

TEMPERATURE REGULATOR
for gas-fired petroleum heaters



Self-powered temperature regulator for control of gas-fired petroleum heaters and treaters is built for severe service conditions. It is made in 1/2 and 3/4-in. valve sizes with temperature range of 110 to 190° F. Regulator bulb can be supplied with or without close fitting, tin-plated steel bulb well or socket. Buna N disc assures tight closure of regulator valve, and O-ring on stainless valve stem provides leakproof valve operation. Stem wiper protects the O-ring seal. ● **Robertshaw-Fulton Controls Co.**, Fulton Sylphon Div., Box 400, Knoxville 1, Tenn.

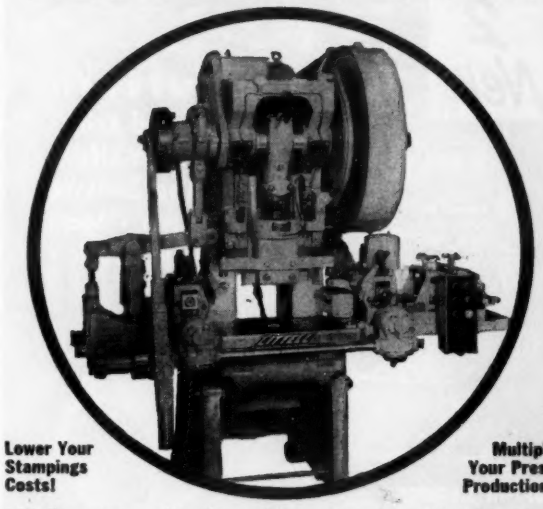
▲ For more details circle **NED-308 C** on enclosed inquiry slip ▲



CHANGE PACKAGE SIZES WITHOUT EXCESSIVE DOWNTIME! Handwheel controls for varying the pouch width, and a simple gear change for varying pouch length, — both made without disturbing the heat-sealing units — provide almost instant adjustability. Thin articles (not necessarily uniform in shape) are pouch packaged between two endless strips of heat-sealing packaging materials at speeds up to 80 per minute. Pouch sizes range from a minimum of 2" x 2" x 1/16" to 27" x 15" x 1½" maximum. The "Flexopaker" is especially applicable for articles in the textile, food, automotive parts, industrial products, hardware or similar industries. High speed "Continuous Flow" performance but with a low price tag. **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**

▲ For more details circle **NED-310 C** on enclosed inquiry slip ▲

LITTELL ROLL FEEDS



Lower Your Stampings Costs! **Multiply Your Press Production!**

Littell engineered to fit readily on standard straight sided and OBI Presses. Feed thick or thin stock up to 72" wide at the speeds required for new efficiency and economy in your stampings production.

F. J. LITTELL MACHINE CO. — SERVING USERS OF COIL STOCK — Branches: Detroit Cleveland

Write for Catalog "A"

4169 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

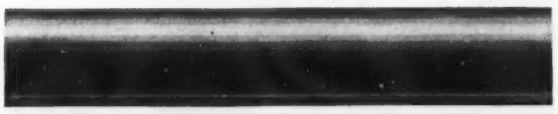
▲ For more details circle **NED-311 C** on enclosed inquiry slip ▲

BUY FROM TUBING SPECIALISTS

write

WOLVERINE TUBE
DIVISION OF
CALUMET & HECLA, INC.
17270 Southfield Road
Allen Park, Michigan
Manufacturers of Quality Controlled Tubing and Extruded Aluminum Shapes

▲ For more details circle **NED-305 C** on enclosed inquiry slip ▲

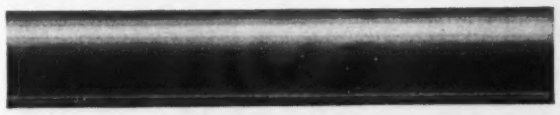


COPPER
COPPER ALLOYS
BRASSES · CUPRO-NICKEL
ALUMINUM
SPECIAL METALS
ZIRCONIUM · MOLYBDENUM

write

WOLVERINE TUBE
DIVISION OF
CALUMET & HECLA, INC.
17270 Southfield Road
Allen Park, Michigan
Manufacturers of Quality Controlled Tubing and Extruded Aluminum Shapes

▲ For more details circle **NED-309 C** on enclosed inquiry slip ▲



IF YOU WANT MORE THAN JUST A TUBE

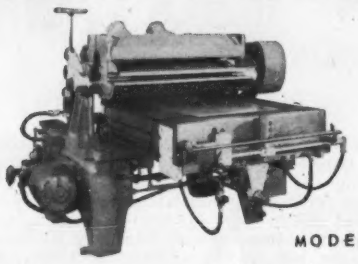
write

WOLVERINE TUBE
DIVISION OF
CALUMET & HECLA, INC.
17270 Southfield Road
Allen Park, Michigan
Manufacturers of Quality Controlled Tubing and Extruded Aluminum Shapes

▲ For more details circle **NED-312 C** on enclosed inquiry slip ▲

SATISFACTION ALWAYS

WITH CLAIR SURFACE FINISHING MACHINES



MODEL 303

As holds for all TEN models, the table type design shown, incorporates the CLAIR quick-change spindles and the time-tested hydraulic and compressed air circuits. All Clair models are available with the wide choice of options which brings each Clair machine into specific conformance with YOUR individual requirements.

CLAIR MANUFACTURING CO., Inc., OLEAN, N.Y.

Offering the Most VERSATILE Line of Surface Finishing Machines

▲ For more details circle NED-313 C on enclosed inquiry slip ▲

2 New RIGID Tubing Cutters

Give you Grooved Rollers for close flare cut-offs... no waste! Also, Enclosed Feed Mechanism • Spare Cutter Wheel in Handle •

RIGID No. 205 Tubing Cutter

Time-Saving, Slide-to-Size 1/8" to 2 3/8" O.D. Capacity

Made of lightweight, high-strength cast aluminum alloy, you'll find these new RIGID Tubing Cutters extra handy. Slight push on handle of large-size-range RIGID No. 205 snugs cutter wheel against tubing . . . locks it in position until released. Feed screw fully protected and enclosed . . . always feeds into tube with easy handle turn . . . can't jam with chips or dirt. Wheel gives quick, clean cuts of copper, brass, aluminum tubing and thin-wall conduit . . . no burr. Grooved rollers give easy flare cut-offs without tubing waste. Tubing always turns freely on 2 of 4 Rollers. Rollers smooth tubing ready for soldering. Fold-in reamer always handy. Spare Cutter wheel in handle. Wheel for plastic and aluminum pipe available for No. 205 only.

Conform to Fed. Spec. GGG-C-771b Type II—Class I—enclosed feed mechanism

RIGID No. 105 Tubing Cutter

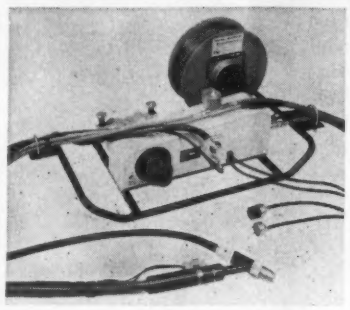
Protected Feed Screw
Always Easy-Turning
1/8" to 1 1/8" O.D. Capacity

To save time and tubing, order these new RIGID Tubing Cutters today! Your Supply House has them!

RIGID®
The Ridge Tool Company, Elyria, Ohio, U.S.A.

▲ For more details circle NED-314 C on enclosed inquiry slip ▲

WELDING TORCH & CONTROL for consumable electrode processes

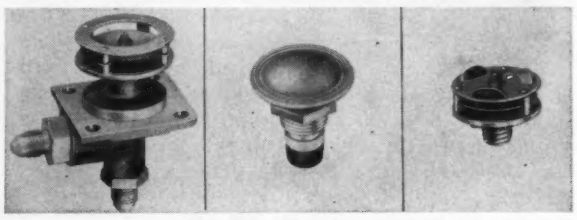


Arc welding control with wire drive and an arc welding torch are additions to the Dual Shield line, both designed for direct current consumable electrode welding processes using shielding gases to make horizontal fillets and flat position welds. The skid mounted, 55-lb WC-1 control has a wire feed rate of 55 to 500 imp for 3/64 to 3/32-in. wire. It will pass through an 18-in. manhole. The AM-1 torch with interconnecting gas, water, and flexible conduit assemblies, has a water cooled cup. This balanced unit has a start-stop switch on the handle. • **Chemetron Corp.**, National Cylinder Gas Div., 840 N. Michigan Ave., Chicago 11, Ill.

▲ For more details circle NED-315 C on enclosed inquiry slip ▲

THERMAL VALVES are actuated by bimetallic disc for on-off or modulated control

Depending upon configuration, thermal valves in the Klixon line are either snap-acting for instantaneous control of gas or liquid media flow or modulating for



graduated control within a fixed temperature range. They are actuated by a bimetal thermostatic disc which mechanically opens and closes an orifice.

Valves are usable for pilot or control service in aircraft, missile, air conditioning, gas appliance, and chemical processing applications. They are completely immersible, are operative from −65 to 500° F, and have high shock and vibration resistance. Seven series (three of which are shown) are available for gas and liquid media flow control. • **Texas Instruments Inc.**, Metals & Controls Div., 34 Forest St., Attleboro, Mass.

▲ For more details circle NED-316 C on enclosed inquiry slip ▲

General Purpose Controls

General Electric Co.—72-page illustrated general purpose control Catalog GEC-1260D describes magnetic and manual motor starters, contactors, relays, solenoids, limit switches, pushbuttons, static controls, and pilot devices. Features, wiring diagrams, dimensions, and application data are included for each device. Pricing tables are included.

▲ For more details circle NED-317 C on enclosed inquiry slip ▲

Portable Hardness Tester

FOR ON-THE-JOB ROCKWELL READINGS

Extremely useful in making accurate hardness tests of warehoused stock or parts on the production line. Tester can be attached at any angle without affecting accuracy. No set-up time required . . . sectioning of specimens is eliminated. Fingertip loading up to 150 kg. Read Rockwell scale directly from large dials . . . no conversion necessary. Rockwell Scales A, B, C, D, E, F, G, H, and K available as standard. Weighs just 3 pounds 6 ounces.

For a demonstration, write Dept. NED-360.

Riehle® TESTING MACHINES
A DIVISION OF
American Machine and Metals, Inc.
EAST MOLINE, ILL.

▲ For more details circle NED-318 C on enclosed inquiry slip ▲

Eastern MIXERS

Mix fluids quickly... thoroughly

To meet a wide variety of process requirements, Eastern offers a complete line from lightweight portables to heavy duty, fixed mounted, propeller and turbine mixers. Each type is available with choice of standard speeds, motor enclosures, mountings, and materials of construction. PORTABLE MIXERS with ratings 1/20 to 3 H. P. are described in Bulletin 530.

Handle the extra heavy-duty jobs in big tanks. Sizes ¼ to 30 H. P. Send for Bulletin 620.

Designed for heavy-duty applications requiring agitators from ¼ to 10 H.P. Send for Bulletin 620.

Range of ¼ to 40 H. P. solves many special mixing problems. Send for Bulletin 1210.

EASTERN INDUSTRIES, INC.
Mixer Division, Dept. N, Norwalk, Connecticut

▲ For more details circle NED-319 C on enclosed inquiry slip ▲

NO MORE COSTLY WAITING LIKE THIS FOR ENGINEERING PRINTS... *install automatic XEROGRAPHY!*

Until recently, one of the most exasperating bottlenecks in industry was the time it took to get engineering drawings copied.

Lineups before reproduction windows were not only common, but chronic. The time of highly skilled . . . and highly paid . . . personnel was lost.

Now, a spectacular breakthrough in the art of reproducing engineering drawings eliminates such waste.

Operating on the electrostatic principles of xerography . . . clean, fast, dry . . . a XeroX® Copyflo® printer—which enlarges, reduces, or copies size to size—automatically turns out prints up to 20 linear feet a minute. That's a print in seconds . . . dry, positive, ready for immediate use.

Just push the button . . . and copies flow! They may be on plain unsensitized paper, translucent vellum, or offset paper masters.

Combined with offset duplicating, a Copyflo continuous printer also makes feasible a stock-print system, in which multiple copies of drawings commonly used are run off in advance of need for self-service availability. Prints are so inexpensive that engineers are urged to discard them rather than re-file them. Costs are cut dramatically, and savings from $20,000 to $100,000 a year are being reported.

A XeroX Copyflo printer offers the fastest, most flexible, most economical way to get copies precisely like the original from microfilm or original documents.

PUSH THE BUTTON... *and copies flow!*

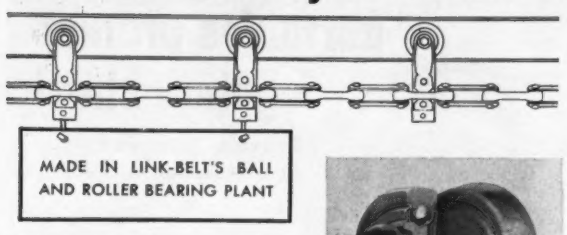
For complete details, write for booklet X-287

HALOID XEROX INC.
60-206X Haloid St., Rochester 3, N. Y.
BRANCH OFFICES IN PRINCIPAL U. S. AND CANADIAN CITIES
Overseas: Rank-Xerox Limited, London, Eng.

HALOID XEROX®

▲ For more details circle NED-320 C on enclosed inquiry slip ▲

LINK-BELT conveyor TROLLEYS



Trolleys are only as good as their bearings. That's why Link-Belt trolleys are *MADE IN A BEARING PLANT BY BEARING SPECIALISTS.*

Simple and rugged, Link-Belt ball-bearing trolleys maintain rolling contact in all positions . . . create minimum power demand . . . give long, trouble-free service.

Available in 2- or 4-wheel types, riveted or bolted, for 3-, 4- or 6-in. I-beams.

NEW TROLLEY BOOK 2636 is now available. Send for your copy today!

LINK-BELT

BALL BEARING CONVEYOR TROLLEYS

LINK-BELT COMPANY, Prudential Plaza, Dept. NED, Chicago 1, Ill. 15,008

▲ For more details circle NED-321 C on enclosed inquiry slip ▲

Bridgeport INNER-SEAL WEATHERSTRIPPING

SEALS } Doors Cabinets Hatches — Windows Compartments — Panels Covers Lids

(1) **SPRING WIRE** — Flexible — Resilient — Durable

(2) **Kem-Blo* SPONGE RUBBER** — Soft — Lively — Extra Good Sealing

(3) **NEOPRENE† Latex COATING** — Resists Oil and Water — Smooth — Good Looking — Long Wearing

Stops air leaks; silences rattles; quiets slamming, absorbs shocks; seals out water, noise, dirt, dust, insects. Used successfully for years by leading manufacturers.

Try it yourself . . . send for free samples and catalog.

*Registered Trade Mark E. I. duPont de Nemours & Company †Registered Trade Mark U. S. Rubber Co. **Write Dept. N-3**

BRIDGEPORT FABRICS, INC., Bridgeport 9, Connnecticut

▲ For more details circle NED-322 C on enclosed inquiry slip ▲

AGAIN . . . Coffing Brings You a New Line of Hoists

The new Safety Pull Aluminum Ratchet and Pawl Lever Hoist is easy to operate —requires minimum handle pull. It may be operated from either side, and the design prevents freezing a load.

Safety has been built into the hoist. It will not ratchet under load if handle is released nor will it free chain. Controls are protected from inadvertent shifting. The bottom stop eliminates any hazard from the handle being released unintentionally. The exclusive safety handle bends to indicate overload.

Strength without excess weight in the new hoist is achieved by a special aluminum alloy which is used in the body and handle.

Available in six models with capacities from ¾ to 6 tons. Ask your distributor or write for Bulletin ADH-86.

COFFING HOISTS

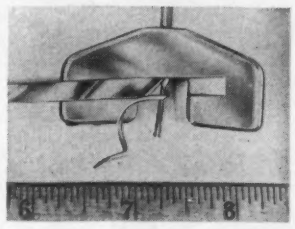
DUFF-NORTON

DUFF-NORTON COMPANY

803 Walter Street • Danville, Illinois

▲ For more details circle NED-323 C on enclosed inquiry slip ▲

SKINNING TOOL removes metal sheath from wire



Metal sheath is quickly and easily removed from Ceramo or other thermocouple wire by this lightweight Skinner. Tool removes the sheath in a manner similar to the action of a pencil sharpener. Wire is inserted into the tool which is rotated in a clockwise direction. Three sizes accommodate 1/25, 1/16, and ⅛-in. OD thermocouple wire. • **Thermo Electric Co.,** Saddle Brook, N. J.

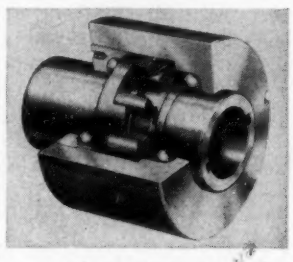
▲ For more details circle NED-324 C on enclosed inquiry slip ▲

GUMMED TAPE DISPENSER delivers 9 to 60-in. lengths

Electronic controls of this gummed tape dispenser can be set to deliver two independently adjustable lengths from 9 to 60 in., as well as one random tape length. Hardened self-sharpening tool steel shears enable the 10 x 16 x 11-in. machine to cut kraft or reinforced tape. It handles 2½ to 3-in. wide tape at 40 in. per second. Plastic water bottle, thermostatically controlled water heater, dual moistening brushes, foot switches, and printing attachments are features of the 110-v, 60-cycle machine. • **Diagraph-Bradley Industries, Inc.,** Box 269, Herrin, Ill.

▲ For more details circle NED-325 C on enclosed inquiry slip ▲

TORQUE TRANSMITTING DEVICE drives, positions, over-runs



This Rev-Lok torque-transmission device operates both clockwise and counterclockwise to drive, position, over-run, and backstop. Two opposing sets of full-complement sprags prevent reverse torque feed back to the input shaft. By gearing a low-speed reversible motor to the outer race and a high-speed motor to the input shaft member, driving torque can be transmitted to the output shaft at two speeds or reversed. With sprags in constant contact with the outer race, any independent movement of output shaft causes instant locking of sprags. There is no backlash on the output shaft. • **Formsprag Co.,** 23601 Hoover Rd., Warren, Mich.

▲ For more details circle NED-326 C on enclosed inquiry slip ▲

Coffing Quik-Lift Electric Hoist . . . 20 models from 1/4 to 2 tons

The new Coffing Quik-Lift coil chain electric hoist is easy to operate and light to handle. The aluminum housing is in sections for quick access to change voltages, limit switch, type of suspension or chain. The pistol-grip, push-button control permits up or down operation while pulling trolley mounted hoists. V-type brake gives maximum braking surface. Lubrication is sealed in for life.

For details consult your Coffing Hoist Distributor or write for Catalog ADH-65.

COFFING HOISTS

DUFF-NORTON

DUFF-NORTON COMPANY

803 Walter Street • Danville, Illinois

▲ For more details circle NED-327 C on enclosed inquiry slip ▲

REPAIR FOR YOUR B&D TOOLS

Check the Yellow Pages under "Tools-Electric" for the location of the nearest Black & Decker factory service branch or authorized service station.

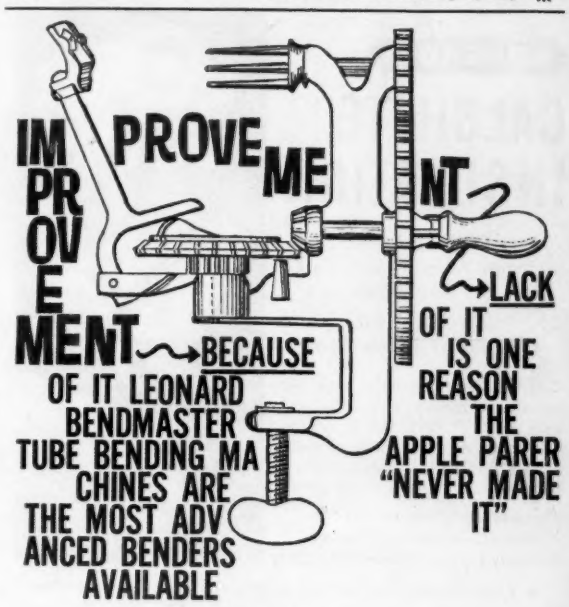
Free tool inspection when requested • Genuine B&D parts used • Factory-trained technicians • Standard B&D Guarantee at completion of recommended repairs • Fast service, reasonable cost, always.

Or write for address of nearest of more than 50 branches and service stations to: THE BLACK & DECKER MFG. CO., Dept. 1903S, Towson 4, Md.

Black & Decker

QUALITY TOOL SERVICE

▲ For more details circle NED-328 C on enclosed inquiry slip ▲



LET US PROVE IT!

LEONARD PRECISION PRODUCTS CO.

DEPT. AP, 9200 BOLSA AVE., SANTA ANA, CALIFORNIA

▲ For more details circle NED-329 C on enclosed inquiry slip ▲

RUGGED for long and constant service

The Coffing Quik-Lift Series S Electric Hoist is designed and made to give dependable cycling service day after day on your production lines. To reduce wear and down-time the gearing system employs the patented Perry Speed Reducer in which more teeth are in mesh than any other type of system.

Long service life also is built in with a heavy-duty motor—oversize brake—safety limit switch—high strength, wear-resistant load sheave—alloy steel link chain—forged alloy hooks—heavy-duty ball bearings—lifetime lubrication and precision machined housings. Twelve models with ½ to 3-ton capacities available. Ask your distributor or write for Bulletin ADH-75.

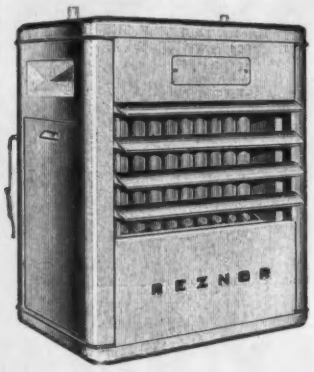
COFFING HOISTS

DUFF-NORTON

DUFF-NORTON COMPANY

803 Walter Street • Danville, Illinois

▲ For more details circle NED-330 C on enclosed inquiry slip ▲



TOUGH BUYERS DEMAND

REZNOR unit heaters

In 70 years, Reznor factory replacement has been less than 1/10 of 1%! Reznor flame-tests each unit before shipment so it comes to you in top running order, and stays that way. Tough buyers know that Reznor heaters cost less over the years.

Write for the catalogue that details all the features: aluminized steel heat exchanger, 2-speed fan, low-voltage controls.

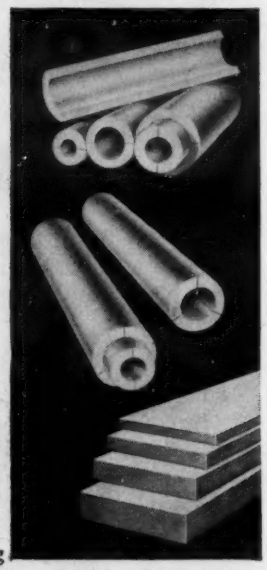
REZNOR Manufacturing Co., Dept. 41-D, Mercer, Pa.

▲ For more details circle NED-331 C on enclosed inquiry slip ▲

RUBEROID®

CALSILITE INSULATION

ONE-LAYER
for High Temperature Pipes and Equipment
TWO-LAYER
for special applications



CALSILITE, a molded calcium silicate insulation, can withstand soaking heat of 1250° F. indefinitely with no appreciable efficiency loss. Available in half-sectional, three-segmental, and block form.

For more information, see:
Chemical Engineering Catalog
Refinery Catalog • Sweet's Catalog

• Lightweight, easy to cut, mitre, and apply • Insoluble in water, normal acids and alkalis • Absorbs moisture without disintegrating • Constant coefficient of conductivity • Resists abuse.

SEND YOUR INQUIRY TO: The RUBEROID Co.
Industrial Products Division • 500 Fifth Ave., New York 36, N. Y.

PIONEERS IN CALCIUM SILICATE INSULATION

▲ For more details circle NED-332 C on enclosed inquiry slip ▲

Hints on fluorescent starter selection

TO PREVENT ONE LAMP BURNING OUT BEFORE THE OTHERS IN 2- OR 3-LAMP FIXTURES...

Use General Electric FS-400 Watch Dog* Starters. A special glow switch in these starters blocks voltage surges and damaging instant starts in the "lead" lamps of lead-lag circuits — prevents the common condition where lead lamps fail prematurely. You save on lead lamp replacement and over-all maintenance costs with General Electric FS-400 Watch Dog starters. You also get: Automatic cutout of blinking lamps — better ballast protection — up to 10 times longer starter life.

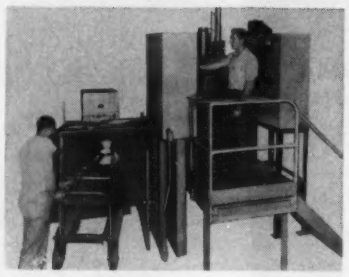
To get more money-saving hints, ask your G-E distributor for the "G-E Starter Selection Chart and Maintenance Guide For Fluorescent Lighting." General Electric Company, Wiring Device Department, Providence 7, Rhode Island.

**Registered Trade-mark of General Electric Company*

GENERAL ELECTRIC

▲ For more details circle NED-333 C on enclosed inquiry slip ▲

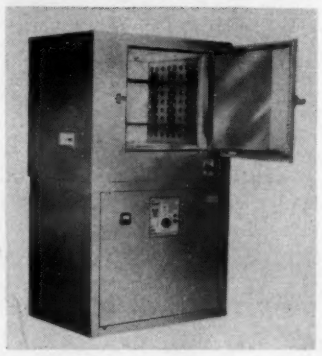
VACUUM MELTING FURNACES for semicontinuous melting, casting



Successive charges of metal to be vacuum refined in induction heated furnaces are introduced into the vacuum chamber from the outside, loaded into the crucible, melted, poured, and the cast pieces removed from the chamber in their molds without breaking the vacuum. Virtually continuous vacuum melting and precision casting can be performed. Packaged Model 437-523 with a 50 to 100-lb capacity can be installed in a single day. Its mold carriage can be fitted with a turntable for pouring several molds from one charge, or with a centrifugal casting device. Mold chamber of 17 to 50-lb capacity is located below the melting chamber, instead of alongside as in the larger model. • **F. J. Stokes Corp.,** 5500 Tabor Rd., Philadelphia 20, Pa.

▲ For more details circle NED-334 C on enclosed inquiry slip ▲

CONVECTION OVENS in 350 and 650° F heat ranges



Saturable power reactor control system, standard on Power-O-Matic 60 mechanical convection ovens, is stepless, switchless, and infinitely proportional. Temperature is constant, straight line, and repetitive throughout the entire oven range. The Hypersil core-equipped reactor is combined with a stainless steel hydraulic bellows and variable gap indicator coil which automatically varies the voltage (wattage) to the resistive load. A Range-Lock fail-safe device is also incorporated. Ovens are wired with voltmeter and circuit breaker. Standard models are available in five sizes from 1 to 24 cu ft in 350 and 650° F temperature ranges. • **Blue M Electric Co.,** 138th & Chatham Street, Blue Island, Ill.

▲ For more details circle NED-335 C on enclosed inquiry slip ▲

Case Packing Ideas

R. A. Jones & Co.—Over 100 "Cartoning and Case Packing Ideas" are contained in 20-page brochure of this title. Each case history reviewed points up the consideration given to obtaining maximum point-of-sale effectiveness and to "carton-ability." The many products that can be cartoned economically on semi-automatic and automatic machinery are shown.

▲ For more details circle NED-336 C on enclosed inquiry slip ▲

TYGON® flexible plastic TUBING

• *Virtually Unlimited Applications*
• *Quick and Easy to Set-Up*

Tygon Tubing offers a unique combination of advantages. Its glass-like clarity permits visual inspection and control of flow. It resists oils, greases and chemicals. Because of its extreme flexibility, Tygon Tubing can be installed in minutes. Its hard, smooth bore is easily flushed clean. Physically tough and abrasion-resistant, Tygon Tubing provides long, trouble-free service life.

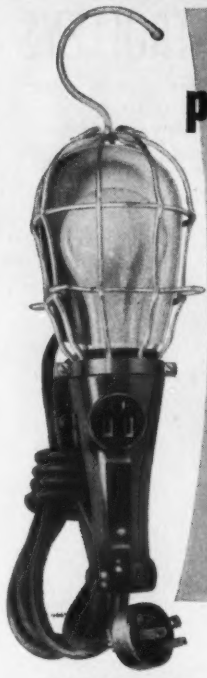
Tygon Tubings are available to handle full vacuums, or braid-reinforced to withstand pressures up to 300 psi. Over 65 sizes are available up to 4" I.D.

440F-1

Write for free Bulletin T-100...today!

U. S. STONEWARE
AKRON 9, OHIO

▲ For more details circle NED-337 C on enclosed inquiry slip ▲



McGill grounded portables protect against shock

Provide grounded power outlet

McGILL grounded portables provide positive protection and are built to take the abuse of rough service. Their exclusive grounding design insures safety against shock that is not found in ordinary guards when insulation wears through, wires short internally or the guard contacts exposed wires. Built for 3 wire cord and 3 blade plug. Built-in extension outlet for 2 parallel blades and a 3rd U shaped blade for ground. Impact resistant molded phenolic handles, extra heavy wire cages and famous LEVOLIER switch. Switch and cord optional.

Available from Electrical Wholesalers.
Send for McGILL Catalog No. 84.

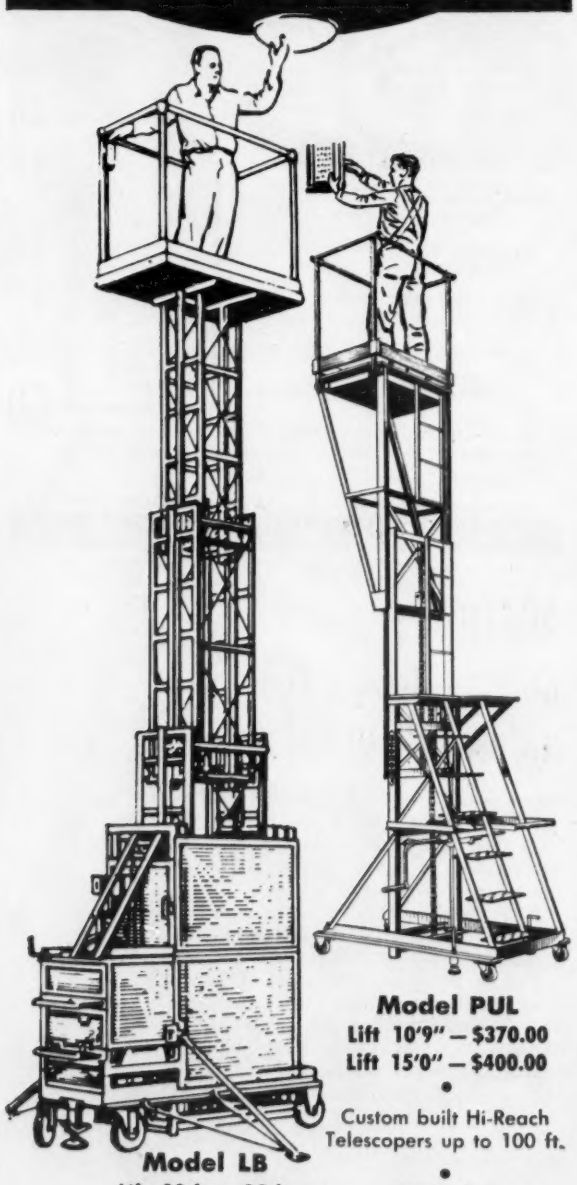
No. 5025 SRG
• UL Inspected
• Conforms to NEC
• Grounding adapted as Standard by ASA

engineered electrical products
McGILL®
precision needle roller bearings

McGILL MFG. CO. INC., Electrical Div., 151 N. Campbell St., Valparaiso, Ind.

▲ For more details circle NED-338 C on enclosed inquiry slip ▲

The man who feels safe works better on overhead maintenance HI-REACH TELESCOPERS



Model PUL
Lift 10'9" — $370.00
Lift 15'0" — $400.00

•

Custom built Hi-Reach Telescopers up to 100 ft.

•

Write for complete catalog

Model LB
Lifts 20 ft. to 35 ft.
$1510.00 up

Headquarters for standard and special built overhead servicing lifters and material handling equipment since 1901.

ECONOMY ENGINEERING
4519 W. Lake St., Chicago 24, Illinois

▲ For more details circle NED-339 C on enclosed inquiry slip ▲

Have You Considered the Important Advantages of FILLED TEFLON*?

Teflon can be considerably enhanced by the use of fillers in certain applications. The use of fillers permit it to be more readily tailored to a wide variety of chemical, electrical and mechanical applications. Also, some mechanical properties can be improved. These include:

1) **resistance to deformation under load**
2) **resistance to wear**
3) **thermal conductivity**
4) **compressive strength**
5) **hardness**

This is the reason filled Teflon has become an important item in the "John Crane" Chemlon® line of better Teflon products.

Chemlon is available with such fillers as glass fiber, carbon, graphite, copper and bronze, talc, calcium fluoride and other inorganic materials.

Request Bulletin T-104. Tell us about your requirements.

Crane Packing Company, 6411 Oakton Street, Morton Grove, Ill. (Chicago Suburb). *In Canada: Crane Packing Co., Ltd., Hamilton, Ont.*

**DuPont Trademark*

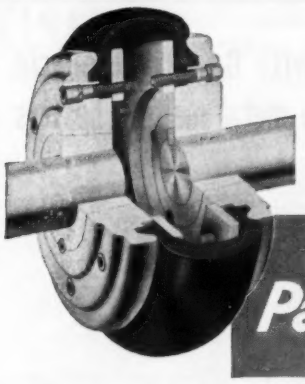
For guide bushings, vanes and wear rings.

For formed gaskets, valve seats and packings.

For electronic bushings, insulators and tuning slugs, also rod and tubing.

CRANE PACKING COMPANY

▲ For more details circle NED-340 C on enclosed inquiry slip ▲



New!

Different!

DODGE **Para-flex**

FLEXIBLE CUSHION COUPLING

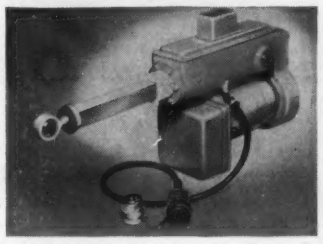
Exclusive tire-like flexing element automatically compensates for end-float, parallel or angular misalignment—singly or in any combination. Absorbs torsional vibration, cushions shock loads. Simplified mounting through use of standard Taper-Lock bushings. Flexible member easily replaced *without moving driver or driven machine.* Capacities to 2000 hp at 1080 rpm. Write for Bulletin.

DODGE MANUFACTURING CORPORATION
2100 Union Street, Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

▲ For more details circle NED-341 C on enclosed inquiry slip ▲

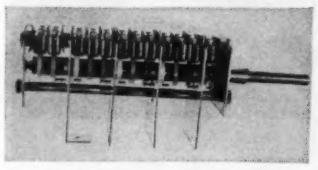
LINEAR ACTUATOR
moves ¾ ton, holds 1½ tons



Stroke of the Model 499B electrically driven linear actuator is continuously adjustable from 4.25 to 5.25 in. Similar Model 499B-1 has shorter stroke from 2.75 to 3.75 in. The heavy duty industrial unit is usable wherever open-loop positioning is required. It moves up to ¾ ton and can hold 1½ tons. A brake minimizes overcoasting. Device is powered by a single-phase, 115-v, 60-cycle motor developing 0.14 hp at 5000 rpm. The compact, self-contained unit weighs 16 lb. • **Lear, Inc.,** Box 688, Grand Rapids 2, Mich.

▲ For more details circle NED-343 C on enclosed inquiry slip ▲

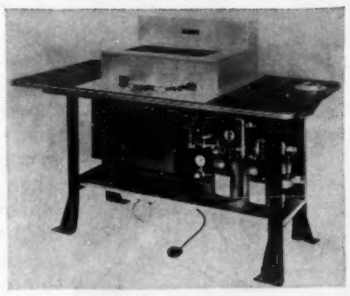
ROTARY SWITCH
covers from 1 to 20 poles



Sensitive miniature snap-action switches that are actuated by nylon cams on the main shaft are incorporated in this rotary switch. They have from 1 to 20 poles, arranged in one, two, three, or four rows. One to 15 detent stations are available with rotation at specified degrees, the minimum being 24 degrees. Applications include test equipment, attenuators, and other electronic assemblies. • **Milli-Switch Corp.,** Gladwyne, Pa.

▲ For more details circle NED-344 C on enclosed inquiry slip ▲

PARTS CLEANER
for precision components, assemblies

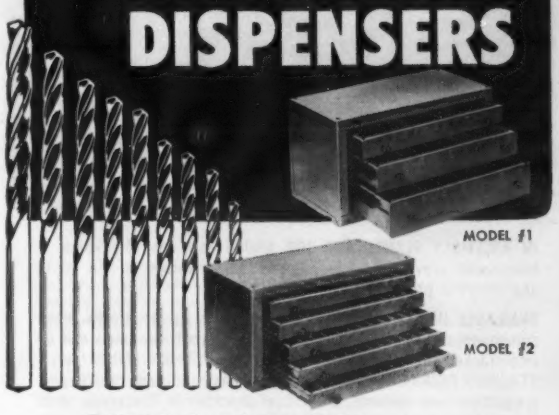


Parts mounted around the periphery of a rotary turntable are automatically indexed by the Model RS-8-6 parts cleaner to successive high velocity spray-clean operations. Finely atomized spray of solvent is combined with heated and filtered air and directed against all areas. Oil, grease, silicone lubricants, rosin flux, fingerprints, and lapping compounds are removed from sensitive switches, relays, choppers, semiconductors, and other precision components and assemblies at a rate of 600 per hour. An integral ventilating system exhausts all vapors. A nonflammable, noncorrosive, nonpolar, and nonionic solvent is used. • **Cobehn, Inc.,** Passaic Avenue, Caldwell, N. J.

▲ For more details circle NED-345 C on enclosed inquiry slip ▲

for easy drill selection and storage, order

HUOT DRILL DISPENSERS



- **For tool cribs or factory storage**
- **Holds 14 half inch drills—dozens more of smaller sizes**
- **Models for fractional, numbered or lettered drills**
- **Built-in inventory or pricing system saves time, eliminates records.**
- **All models 7x7x14 inches—easy to stack—compact!**

Model #1 at $18 from your Mill Supply House

Save time that's lost drill-hunting—write for complete information!

HUOT **HUOT MANUFACTURING CO.**
Rhymes with "Do It" 571 No. Wheeler St., St. Paul 4, Minn.

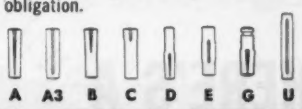
▲ For more details circle NED-347 C on enclosed inquiry slip ▲

have you checked **DRIV-LOK PIN** *advantages?*

1. **Positive anchoring . . . once in they *stay in* . . . yet they're reusable**
2. **Stronger, safer, solid body**
3. **Quick installation . . . Lower Costs**

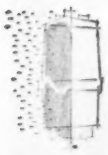
TYPICAL APPLICATIONS:

DRIV-LOK Pins are effecting great economies and product improvement in applications of every type. Easy to install—just drill the hole and press or drive them in. The job is done—no reaming, no expensive hole preparation. Available in carbon steel in 8 standard types; also a wide variety of special materials. Write us, describing your fastening requirements. Catalog and samples sent without obligation.



DRIV-LOK SALES CORPORATION
717 Park Avenue • Sycamore, Illinois

▲ For more details circle NED-348 C on enclosed inquiry slip ▲



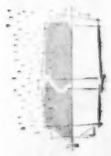
DOLLINGER DRY FILTER *Specialists for 39 years*

HI-VELOCITY ELECTRONIC AIR CLEANER

DOLLINGER HI-VELOCITY ELECTRONIC AIR CLEANER is entirely new. Highly efficient, it removes 90% of all airborne dirt, including smoke, dust, pollen, oil mist. Simple one-unit design . . . fewer parts to assemble . . . lighter weight for easy installation . . . overhead mounting possible. Comes in single units of 1200 and 1800 CFM; any capacity in multiple units. Consult your local Dollinger representative or write for Bulletin 405. Dollinger Corporation, 49 Centre Park, Rochester 3, N. Y.

PROTECTOMOTOR STAYNEW FILTERS **DOLLINGER**

▲ For more details circle NED-342 C on enclosed inquiry slip ▲



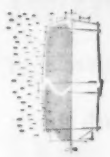
DOLLINGER DRY FILTER *Specialists for 39 years*

ELECTRONIC MIST COLLECTOR

DOLLINGER ELECTRO-STAYNEW MIST COLLECTORS are actually self-contained ventilating systems for individual machine tools. Remove oil, smoke, grit and chips from air . . . return clear air to shop. Saves you hundreds of dollars in building maintenance. Greatly reduces employee sickness. Available in 800, 1200, 1600 CFM. Consult your local Dollinger representative or write for Bulletin 420. Dollinger Corporation, 49 Centre Park, Rochester 3, N.Y.

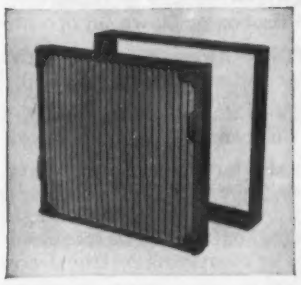
PROTECTOMOTOR STAYNEW FILTERS **DOLLINGER**

▲ For more details circle NED-346 C on enclosed inquiry slip ▲



DOLLINGER DRY FILTER *Specialists for 39 years*

DRY AND VISCOUS PANEL FILTERS



DOLLINGER STAYNEW DRY PANEL FILTERS offer efficient, heavy-duty air conditioning and ventilating for all industrial and commercial systems where viscous-type filters are indicated. Lightweight, strong, large dust-holding capacity . . . low restriction to air flow, easy to clean. Wide range of sizes, models, filter media. Consult your local Dollinger representative or write for Bulletin 700. Dollinger Corporation, 49 Centre Park, Rochester 3, N. Y.

PROTECTOMOTOR STAYNEW FILTERS **DOLLINGER**

▲ For more details circle NED-349 C on enclosed inquiry slip ▲

POINT-OF-USE STORAGE

Reduces Parts Loss and Damage

SAVES SPACE and TIME

IN ASSEMBLY PLANTS AND JOB SHOPS low cost Stackbins in Stackracks provide flexible point-of-usage storage to cut costs and increase production.

AVAILABLE IN 8 SIZES, individual Stackbins in Stackracks make components of high usage accessible. Different size units can be interstacked to provide centralized control of related parts. STACKBIN POINT-OF-USAGE STORAGE is easily adapted to changing production requirements. Individual Stackbin in Stackrack units interlock: no tools, fasteners or set-up time required.

ALL STACKBIN PRODUCTS ARE SOLD DIRECT

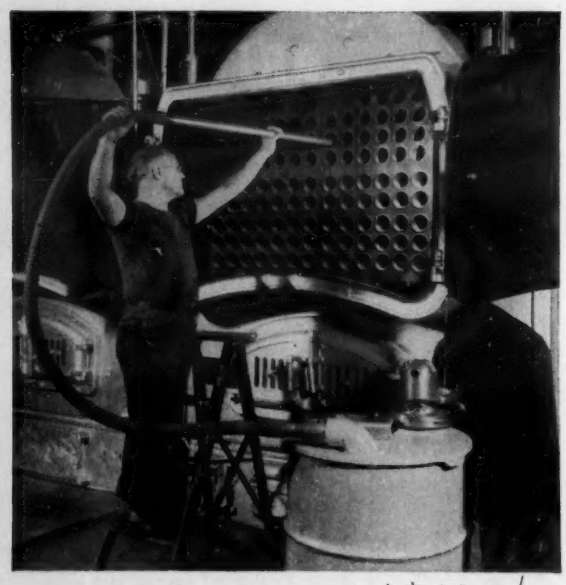
WRITE FOR CATALOG 505

STACKBIN CORP. 1081 Main St., Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Perth

STACKBIN® SYSTEM "Stacked and Still Accessible"

▲ For more details circle NED-350 C on enclosed inquiry slip ▲



THERE'S A GOLD MINE IN YOUR BOILER ROOM!

Super tube scraper does fast, thorough job.

● Have you overlooked the cost cutting potential in your boiler room?

SAVE—9.5% to 75% of your fuel bill with Super boiler tube cleaning equipment.

CLEAN—No soot scattered in boiler room, pushed into firebox or blown on operator.

QUICK—All soot pulled into steel drum or container for once-and-all disposal.

EASY—Makes a laborious, dirty job that is usually put off a simple, clean operation quickly done.

You also have a real heavy duty wet and dry pick-up Super Suction Cleaner for general use in the whole plant, and in many production operations where blowing or suction is required for removing dust, chips or recovering or transferring liquids.

Get all the facts. Write for Super brochure on boiler cleaning. See your local Super distributor.

THE NATIONAL SUPER SERVICE COMPANY
1958 N. 12TH STREET, TOLEDO 2, OHIO

In Canada: Plant Maintenance Equipment Co. Toronto, Montreal, Vancouver

SALES AND SERVICE IN PRINCIPAL CITIES

"Once Over Does It"

SUPER SUCTION SERVICE®

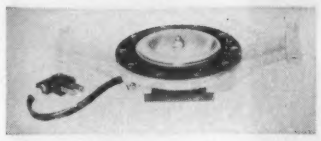
Power Suction Cleaners • Quality Floor Machines

SINCE 1911

"THE DRAFT HORSE OF POWER CLEANING MACHINES"

▲ For more details circle NED-351 C on enclosed inquiry slip ▲

SIGNAL HORN alerts personnel in noisy areas



Audio output in excess of 105 db at 3 ft is produced by the 110-v 60-cycle PA-37100 signal horn to alert personnel in high - level noise areas. Vibrating diaphragm is driven by contactless armature. Horn can be used to notify when machinery speed or temperature limits are exceeded, to warn of various operational conditions, or function as a loud, far-carrying industrial signal. ● **Wheelock Signals, Inc.,** Branchport Road, Long Branch, N. J.

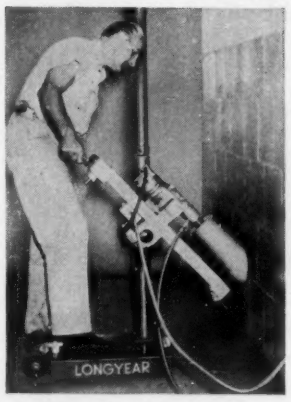
▲ For more details circle NED-352 C on enclosed inquiry slip ▲

LIMIT SWITCH TEMPLATES help speed up drafting work

Drawing templates of the Model M Loxswitch precision limit switch, in full and half scale, are available free. They are designed to speed up drafting work by simplifying the tracing of switch details. Templates show front and side dimensional views of M3 and M4 switches which have good electrical and mechanical characteristics in a compact size. Write for Template M370. ● **R. B. Denison Mfg. Co.,** 386 Broadway, Bedford, Ohio.

▲ For more details circle NED-353 C on enclosed inquiry slip ▲

MASONRY DRILLS in vertical and swivel models



Both the Model 330 swivel type and the Model 305 vertical hole type masonry drill have capacity to drill 6-in. holes in reinforced concrete, brick, tile, or stone. Optionally powered with interchangeable air or electric motors, both have screw feed head to apply needed pressure to the diamond bit by merely turning a crank. Illustrated swivel model drills at any angle, or it can be removed from its base and mounted on column or crossbar. For horizontal work, the screw feed mechanism of the vertical model can be removed from the base and anchored to the wall. ● **E. J. Longyear Co.,** 76 S. Eighth St., Minneapolis 20, Minn.

▲ For more details circle NED-354 C on enclosed inquiry slip ▲

ALLIED DIVERSE TYPES OF DRIVE WHEELS

SIMPLIFY YOUR PRODUCT PROPELLING PROBLEMS!

ALL TYPES—MANY SIZES:

● Let field tested and proven ALLIED Drive Wheels solve your propelling requirements. Big selection of high production stock types and sizes, at favorable prices!

SPROCKET DRIVE WHEELS—7 to 10" dia. for low speeds and weights.

PULLEY DRIVE WHEELS—8 to 12" dia. for up to 350 lb. loads.

KEY DRIVE WHEELS—8 to 12" dia. for 10 mph speed and larger loads.

WASHER DRIVE WHEELS—6 to 12" dia. for walking speed only.

COTTER PIN DRIVE WHEELS—many sizes.

VARIATIONS AT SMALL COST

Slight modifications of ALLIED stock Drive Wheels can be made with minimum or no tooling cost—to meet O.E.M. precise requirements in production quantities!

FREE ROLLING WHEELS TO MATCH

ALLIED offers matching companion wheels for all types and sizes of Drive Wheels—with choice of any standard wheel bearings. Hub Caps available for all wheels too!

FOR DETAILS, WRITE DEPT. N

ALLIED WHEEL PRODUCTS, Inc.
27 BROADWAY • TOLEDO 4, OHIO

Representatives and Warehouses in Fifty Principal Cities

▲ For more details circle NED-355 C on enclosed inquiry slip ▲

Now—print your own identification labels as you need them!

JUST OUT—The new Weber Dual-80 Label Printing Machine. Prints product and content identification labels at the rate of 105 a minute. Variable information—sizes, weights, code numbers, etc.—can be changed any time you want in a matter of seconds. Dual-purpose—prints from both rubber mats and stencils. Saves label printing costs. Ends label inventory problems.

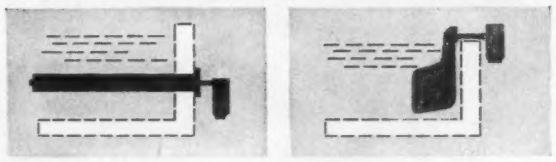
Weber

WEBER MARKING SYSTEMS, INC.
Dept. 25-C
Weber Industrial Park
Mount Prospect, Illinois

▲ For more details circle NED-356 C on enclosed inquiry slip ▲

When you melt soft metals . . .

Reduce costs with General Electric melting pots and metal melting heaters



No matter what your metal melting problem, electric heat offers these advantages.

FAST MELTING: Electric heat cuts melting time by two thirds because every Btu goes directly from heater to the metal. On actual test, eight tons of metal were melted from ambient in one hour and ten minutes.

AUTOMATIC CONTROL: With General Electric heaters you get evenly regulated temperatures—automatically. Oxidation is reduced. Operating costs are lowered.

LOW MAINTENANCE: General Electric heaters often give 15 years or longer service without maintenance. Heaters can be replaced quickly without interrupting production.

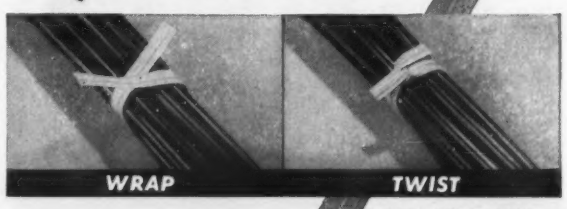
FREE BULLETINS

For more information, write Section 723-32, General Electric Company, Schenectady 5, N. Y., and ask for GEA-5098 MELTING METALS, GEA-6113 SELECTOR GUIDE FOR METAL MELTING, and GEC-1005 CATALOG OF GENERAL ELECTRIC HEATERS AND DEVICES.

GENERAL ELECTRIC

▲ For more details circle NED-357 C on enclosed inquiry slip ▲

Speed Tying Operations!



★ Cheaper than String
★ Faster than Tying
★ Sure Grip
★ Colorful

NO KNOTS TO TIE!

Cut your tying time in half! Hanscom-Ties are the fast, sure way to bundle wires, cords, coils, etc. Nothing to tie. Just wrap 'em around and twist. For temporary or semi-permanent holding. Available in cut lengths 1" to 24" and on spools — bright colors or printed. Prices from 26c per thousand. WRITE FOR SAMPLES and TRY 'EM YOURSELF.

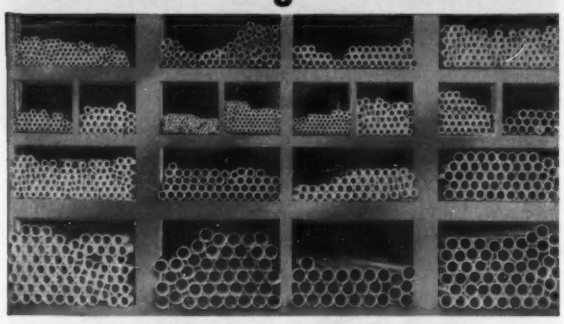
H.F. Hanscom & Co., Inc.
15 Virginia Avenue
Providence 5, R.I., U.S.A.

Top view of Hanscom-Tie is shown. Bottom is flat

Hanscom-Ties

▲ For more details circle NED-358 C on enclosed inquiry slip ▲

Now from large mill stocks



CARPENTER STAINLESS HEAT EXCHANGER TUBES

• Save time! Types 304 and 316 stainless tubes of heat exchanger quality are now available from Carpenter's large mill stocks. Sizes ⅜" to 1" O.D. in 16 and 18 BWG. Lengths up to 40 feet cut to suit your needs. These full finished tubes (that completely meet ASTM Spec. A249) pass the most searching non-destructive test now applied to stainless tubing. Carpenter's extra-close quality control assures the highest degree of performance—saves time, money and trouble. Next time you need stainless heat exchanger tubing, contact your Carpenter representative *first*.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

▲ For more details circle **NED-359 C** on enclosed inquiry slip ▲

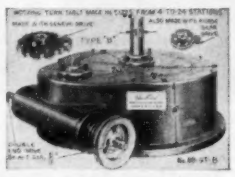
EISLER

FOR 39 YEARS

We supply any part or complete equipment . . . Special turntables made to order

INDEXING TURNTABLES
MORE THAN 100 DIFFERENT TYPES

- FOR WELDING • BRAZING • SOLDERING • SPRAYING
- GLASS INSULATOR MELTING AND GLASS GLAZING with rotating stations and indexing with barrel cam or Geneva gear action.
- For work transferring, tilting positions. . Motorized or hand operated.



Eisler Indexing Turntables are completely electrically controlled

AND CAMS MADE TO YOUR SPECS!

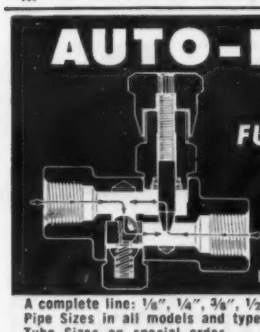
"Ask for catalog 88-57"

EISLER ENGINEERING CO., INC.
740 SO. 13th ST., NEWARK 3, N. J
Charles Eisler, Jr., President

▲ For more details circle **NED-360 C** on enclosed inquiry slip ▲

AUTO-PONENT®

HYDRAULIC FULL FLOW VALVES



Flow Control, Needle, Check, for HYDRAULIC Power

Model KF Flow Control Valve with Dial and Knob adjustment for direct reading and duplicating reference. Now available in Aluminum for 3000 psi.

Pat. #2,841, 174

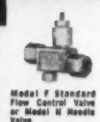
A complete line: ⅛", ¼", ⅜", ½", and ¾" female Dryseal Pipe Sizes in all models and types. Equivalent Aeronautical Tube Sizes on special order.

MINIMUM PRESSURE DROP AND POWER LOSS . . . Oversize ports and passages give maximum flow at minimum pressure drop, insure greater accuracy and response in hydraulic or large volume air cylinder control.

EASY FLOW ADJUSTMENTS under full pressure. Seal located at port to eliminate air or dirt traps. Gland structure equally effective on pressure or vacuum.

SENSITIVE, CHATTERLESS BALL CHECK . . . Patented design insures rapid ball movement to open or close at low differentials.

FORGED BODIES permit higher pressures with wide safety margins. Aluminum—3000 psi; Steel and Stainless Steel—5,000 psi. Pressure ratings based on better than 5 to 1 safety factor. All internal parts are Stainless. Write for illustrated catalog.



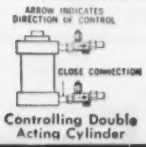
Model F Standard Flow Control Valve or Model H Needle Valve

Model KF Knob and Dial Flow Control Valve or Model KH Needle Valve.

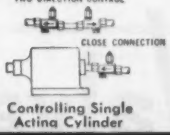
Model PF Knob and Dial Flow Control Valve or Model PH Needle Valve for panel mounting.

Model C Check Valve for In-Line Mounting.

TYPICAL APPLICATIONS



Controlling Double Acting Cylinder



Controlling Single Acting Cylinder

AUTOMATION AUTO-PONENTS INC. COMPONENTS
2929 GRANT STREET
BELLWOOD (Chicago Suburb) ILLINOIS

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PRODUCTION CONTROL BOARD user creates his own layout

This Memo Flex visual control or schedule board is offered with all elements which allow user to create his own custom layout for control of production, inventory, maintenance, personnel, and other operations. Fifty flexible plastic strips, held at the edges of the board, slide up and down. They snap in and out for easy rearrangement. Columns are laid out with black striping tape. Entries are made directly on plastic strips with grease pencil and can be wiped off with cloth or tissue. Price is $39.50. • **Garrison Machine Works, Inc.**, 519 Bannock St., Dayton 4, Ohio.

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VARIABLE TRANSDUCER responds to 0.0001-in. movement

Any process or machine quantity which occurs as a change in position can actuate this Regohm transducer to initiate control of up to ¼ kw of power. The compact package can be mounted in any position, is direct acting, and responds to less than 0.0001-in. mechanical displacement. Mechanical connection to suit the controlled machine is accomplished by shaping the linkage rod. User selects from a variety of resistance tapers to meet his requirement. Plug-in feature simplifies external wiring. • **Electric Regulator Corp.**, Pearl Street, Norwalk, Conn.

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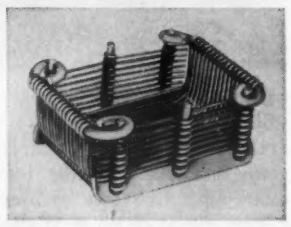
FURNACE BASKETS & TRAYS made of molybdenum for high heats



Maximum open area of 50 per cent assures fast heats and maximum circulation of atmosphere through these heat treating furnace baskets and trays. They are made of molybdenum for use in excess of 3000° F. Fabricated without welds, the baskets and trays feature Bixco looped wire cross rod design with slotted openings. • **Bix Co.**, Fairgrounds Road, Wellington, Ohio.

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In the spots that count . . .
HOMESTEAD® VALVES ARE
LEAKPROOF

Triple head seal—2 rings of lubricant, plus reinforced Teflon* stem seal prevent leakage.

*Registered DuPont Trademark

Controlled, pressurized lubrication system forces full lubricant seal around ports, and over all sealing surfaces—positively prevents sticking. Write today for full details.

HOMESTEAD VALVE MANUFACTURING COMPANY
P.O. Box 84 • Coraopolis, Pa.

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Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1380 East 222nd St. • Cleveland 17, Ohio

"HARDSTEEL"

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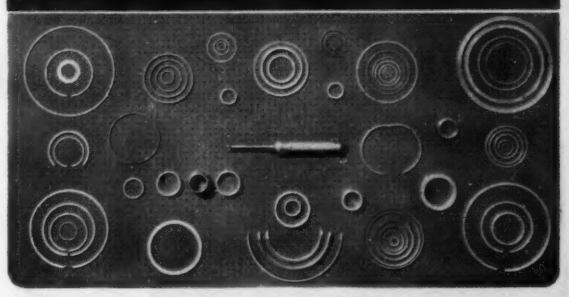
PISTON RINGS for every purpose



HYDRAULIC CYLINDERS
COMPRESSORS
STEAM ENGINES
DIESEL ENGINES
DIE CASTING MACHINES
SHAFT SEALS
AIRCRAFT—AN SCRAPERS
AND MANY OTHERS

Auto-Diesel has specialized in piston rings since 1921. We have but one thing to offer you—Quality Piston Rings—to your specifications—delivered on time—at attractive prices.

1921 AUTO-DIESEL CLEVELAND 1959

Catalog on Request

THE AUTO-DIESEL PISTON RING CO.
3141 Superior Avenue • Cleveland 14, Ohio

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STOP SLIPPING ON FLOORS, RAMPS, STEPS, CATWALKS...trowel on Flintdek*!

- Available in tile red, green, blue, cement gray and high visibility yellow for all walking areas.
- Resists water, gasoline, oil, alcohol, fats, dilute acids and alkalies.
- Doesn't chip, crack or peel over metal, wood or concrete. Covers 50 sq. ft. per gallon.

For particulars on Flintdek safety coating write: The Flintkote Company, Industrial Division, 30 Rockefeller Plaza, New York 20, N. Y.

*Reg. U.S. Pat. Off.

FLINTKOTE

Manufacturer of America's Broadest Line of Building Products

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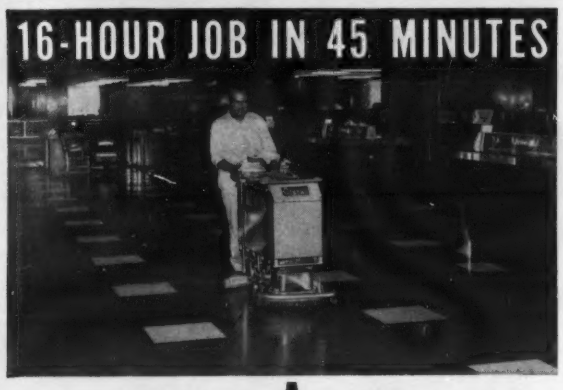

ClarkeAmatic

self-propelled floor maintainer

Cleans the 7214 sq. ft. floor in Atlanta's Fulton Bank in 45 minutes — formerly a four-hour job for a four-man crew. Saves 15¼ man hours. *Does a better job, too.*

Battery, electric, gasoline, propane powered models. Ask your Clarke distributor how much *you'll* save.

THE BEST KNOWN NAME IN FLOOR MACHINES

POWER SWEEPERS • WET-DRY VACUUM CLEANERS • FLOOR MAINTAINERS • UPHOLSTERY SHAMPOOER-VACUUM

CLARKE FLOOR MACHINE COMPANY
223 E. Clay Avenue, Muskegon, Mich.

Authorized Sales Representatives and Service Branches in Principal Cities
Distributed in Canada: G. H. Wood & Co. Limited, Box 34, Toronto 18, Ont.

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HOW TO FORM

a rectangular shape with the

DI-ACRO ROLLER

Forming small and large circles without flat spots and a variety of other sheet metal shapes is easily accomplished on the Di-Acro Roller with its *exclusive cam actuated Idler Roll.* Rear roll indicators allow operator to quickly return to a previous setting. Eight models from 6" to 42" forming width.

1. Introduce metal with Idler Roll disengaged.
2. Roll thru to desired point and engage Idler Roll.
3. Continue bend until angle is formed.
4. Disengage Idler Roll and roll to next point.
5. Engage Idler Roll to make second bend.
6. Repeat process until shape is formed.

NEW DI-ACRO POWER ROLLERS

Increase speed and efficiency. Forward, stop and reverse are governed by foot control leaving both hands free for feeding materials. Six sizes from 12" to 42" wide all with 2" ground and polished forming rolls.

For six page roller folder call your nearest Di-Acro dealer listed in the yellow pages under Machinery—Machine Tools or write to us.

Find Us Fast In The Yellow Pages

pronounced *die-ack-ro*

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.
354 8th Avenue
Lake City, Minnesota

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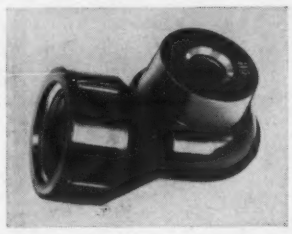
SPRAY NOZZLES
made of noncorrosive butyrate



Design and low inherent friction of these hollow cone spray nozzles allow spraying to begin at ½ psi. The noncorrosive spray heads are injection molded of Tenite butyrate for use in air washers, cooling towers, spray ponds, and evaporative condensers. Nonporous material resists buildup of lime and other deposits. Nozzles are easily installed hand tight and are cleaned with common materials, but low cost makes replacement more efficient than cleaning. Seven capacities from 0.8 to 7 gpm and ⅜, ½, and ¾-in. pipe sizes are offered. • **Austin Mfg. Corp.**, 305 Perry Brooks Bldg., Austin 1, Tex.

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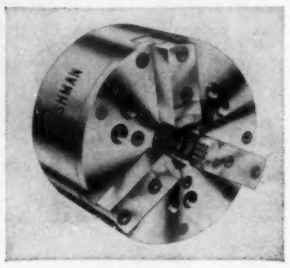
CHUCKER CHUCK
is air-operated, large bore unit



Especially suited for use on automatic chuckers, this air operated chuck has a small over-all diameter, large bore capacity, and lever ratio of 6 to 1. Ample cross section assures strength and precision performance. All chuck surfaces are hardened and ground except for soft face and flame hardened ways. • **Cushman Chuck Co.**, 808 Windsor St., Hartford 2, Conn.

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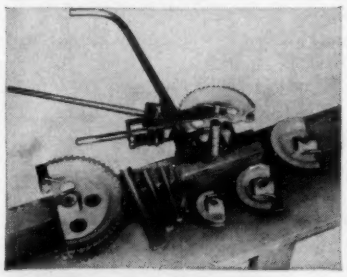
BENCH MOUNTED BENDER
bends up to 1½-in. steel tubes



Both production and maintenance work are handled in the shop or on the job with this Model T-3 bench bender. Direct lever operated, it will bend up to 1½-in. soft copper and aluminum tubes. With ratchet dies, it will form 1¼ and 1½-in. OD steel tubes. Compression type bending allows short radii without mandrels. Right or left hand bends are made with tangents of about one tube diameter between bends. Complete with five sets of dies for ½ to 1½-in. tubing, it lists for $199.50. • **Wallace Supplies Mfg. Co.**, 1304 Diversey Parkway, Chicago 14, Ill.

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NEW Gradient micro-Web

PULMOSAN G-W

DUST FILTER for

- **BETTER FILTRATION OF ALL DUSTS**

U. S. Bureau of Mines approved for dusts not more toxic than lead and chromic acid mists.

- **EASIER BREATHING**
- **LONGER FILTER SERVICE**

A radically new disc-type filter with micro-web pores formed with an ultra-fine fibrous base. A great advance in filtering efficiency for all dusts — no advance in filter prices.

U. S. BUREAU OF MINES APPROVED

May be used with any Pulmosan U.S.B.M.-approved respirators. Write for full information.

PULMOSAN STOPS

Pulmosan SAFETY EQUIPMENT CORPORATION

644 Pacific Street, Brooklyn 17, N. Y., STerling 9-0200
1007 Washington Ave., St. Louis, Mo., CHestnut 1-9393

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Predetermining Counters provide simplified methods for Automatic Control

Veeder-Root Predetermining Counters now make it possible to design and build automatic control into equipment of all types. They are available for mechanical, electrical and electronic control and offer many features and options to give your equipment extra value and versatility.

Predetermining Mechanical Counters can be applied to rotary, eccentric or stroke type motion, registering or counting whatever units are required — such as revolutions, motions, turns, pieces, lengths, and strokes.

Automatic control is provided by actuating such devices as: lights, bells, signals and stop motions. They work at speeds up to 8000 counts per minute, can be easily incorporated into machine design and control panels. For information, call or write your nearest Veeder-Root office.

VR29-102

Veeder-Root
HARTFORD 2, CONNECTICUT
"The Name that Counts"

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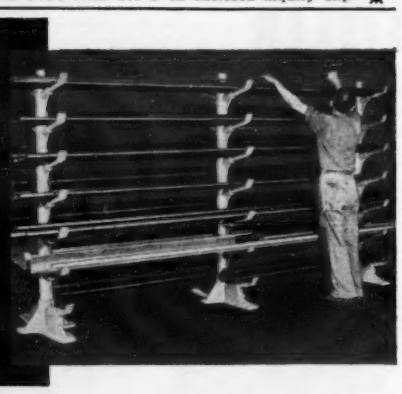
SAVE SPACE • SAVE TIME



Store and remove stock quickly—either by hand, fork truck or overhead crane — using the proved Brown Method for efficient storage. Brown Stock Racks, spaced as required, store more in less space . . . reduce handling from a long end haul to a short lateral movement. Stock is quickly visible for fast selection . . . easily accessible from the sides or ends.

Very low installation costs . . . all components are slip-fitted . . . no bolting or tools needed. Base brackets, trays and other accessories are available to increase usefulness. Both single arm wall racks and double arm racks are available.

Brown Engineering Co., 129 N. 3rd St., Reading, Pa.

■ Get complete data on Quick-Serve Racks. Write today for bulletin.

BROWN FLEXIBLE STOCK RACKS

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VALVAIR®

Heavy-Duty Cylinders

VALVAIR HEAVY-DUTY CYLINDERS are built to JIC standards . . . offer a full range of bore and rod sizes, interchangeable mounting styles, stroke lengths and cushioning options.

Take advantage of one-source responsibility for all your control system needs . . . cylinders, valves, manifolds, filters, regulators and lubricators . . . call in your nearby VALVAIR Field Engineer today.

For more information, write for free Bulletin VC-800. Address: Valvair Corporation, Akron 9, Ohio, Dept. NED-360.

8113

Valvair AKRON 11, OHIO

A DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)

Other INDUSTRIAL DIVISIONS of IBEC: The Sinclair-Collins Valve Co., The Bellows Co., Akron, Ohio • V. D. Anderson Co., Cleveland, Ohio.

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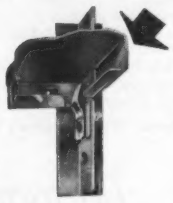
LYON® STEEL SHELVING

Patented Clip and Stud design provides lowest cost and quickest assembly plus complete adjustability without the use of bolts, nuts or tools.



Write for free 92-page Lyon Steel Equipment Catalog.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

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FOR VERSATILE LIFTING POWER *specify* **RUGER MULTI-PURPOSE MOBILE HYDRAULIC CRANES**

PRICED AS LOW AS $149.00 TM ¼

NEW STACK-OR-LIFT ACCESSORY AVAILABLE For ½, 1 and 2 ton cranes.

Ruger mobile hydraulic cranes reach-in-under-over . . . lift more for less. Only Ruger enables one man to combine almost all lifting, stacking and moving jobs into one operation. Ruger Multi-Purpose crane models are: floor . . . truck . . . convertible floor and truck . . . short mast . . . high mast . . . wide base . . . adjustable legs and retractable outrigger for side lifting. Variable speed hydraulic controls at no extra charge. Electric models optional. Get the facts about versatile lifting power, send for data today.

RUGER

The Crane with 1000 uses . . . capacities ¼ to 3 ton.

RUGER EQUIPMENT INC.
619 W. Fourth St., Uhrichsville, O.
N-454-RE

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LYON® BAR, PIPE AND ROD UNITS

Double-Face Models for Center Floor Use. Single-Face for Against Wall Locations

Ideal storage for bars, pipe, rods, posts—all long parts. Arms adjustable every 1½" with spacing as close as 7½". Uprights positioned to permit either manual or crane loading. Built of heavy-duty steel. Finish, durable gray baked-on enamel.

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SHOP & LAB GARMENT disposable type of nonwoven cotton

Poncho construction of this disposable cotton garment has side vents and offers maximum protection in front and back. It is suited for laboratory workers, shop personnel, and others required to wear protective coverings. Garment is made of bonded nonwoven cotton and hangs 44 in. from shoulder to below knee. Price is 20 cents each. Samples are available. • **B. H. Jordan Co.**, 64 E. Eighth St., New York 3, N. Y.

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BAND CLAMP for wire and tube bundles

Permanent, vibration-proof holding of wire, cable, tubing, or hose bundles is provided by the nylon Wedge Lock band clamp (*NED, July* '59). It is now offered with a separate mounting tab which can be premounted at support points, with clamp and wiring added later. Tab can also be slipped on its clamp when the cables are bundled in advance. Prior to locking, the tab slides to any position on the clamp. Ratchet teeth form a permanent lock. One size accommodates cable or wire diameters from ⅛ to 1¾ in. • **Weckesser Co.**, Dept. ND-5, 5701 Northwest Highway, Chicago 46, Ill.

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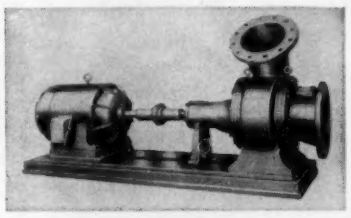
SOLIDS HANDLING PUMPS capacities up to 9500 gpm



Fluids with fibrous, granular, or abrasive or nonabrasive solids in suspension are handled by this line of nonclogging heavy duty solids handling pumps. Thick liquids such as paper stock, starches, slimes, and slurries can also be handled at temperatures to 350° F and pressures to 400 psi. All rotating parts of the end suction, vertically split pumps are readily accessible without disturbing pipe connections. Seven materials of construction offered include stainless steel. Five sizes have capacities up to 9500 gpm with heads up to 220 ft. • **Goulds Pumps, Inc.**, 200 Black Brook Rd., Seneca Falls, N. Y.

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WHICH BLADE DO YOU NEED?

Just a few of the many styles of interchangeable, surgically-sharp blades for **x-acto® precision knives**

SPECIAL OFFER! If you haven't tried an X-acto, send $1 for knife handle and sample blade assortment.

Complete Catalog on request.

X-acto Precision Tools Are Sold Through Electronic Jobbers

HANDICRAFT TOOLS, INC. *a division of* **X-ACTO, INC.** 48-416 Van Dam St., L. I. C. 1, N. Y.

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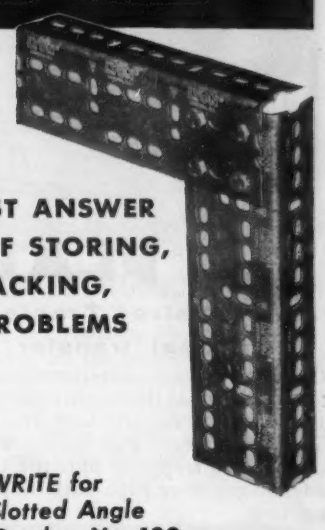
LYON SLOTTED ANGLE



THE LOW COST ANSWER TO SCORES OF STORING, RACKING, STACKING, MOUNTING PROBLEMS

WRITE for Slotted Angle Catalog No. 180

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General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

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SOLVE "TOUGH" PARTS PROBLEMS WITH Colonial's SILICONE RUBBER

There's practically no end to the usefulness of silicone rubber as a material for making rubber parts. It won't melt or harden at 700 deg. F., won't conduct electricity, is not affected by sun, water or weather, and even dry ice can't freeze it. These and many other desirable properties which can be obtained through Colonial's expert compounding, make silicone rubber the most likely material for solving your "tough" parts problems.

Whether you are designing new products, or improving existing ones, contact Colonial Rubber Company for details on the advantages of fabricating more efficiently and *profitably* with silicone rubber. Our service is complete . . . you can call on us for any one or all three of the following:

EXPERT COMPOUNDING
ACCURATE PRODUCTION
QUICK DELIVERY

1967-1

COLONIAL RUBBER CO.
RAVENNA, OHIO

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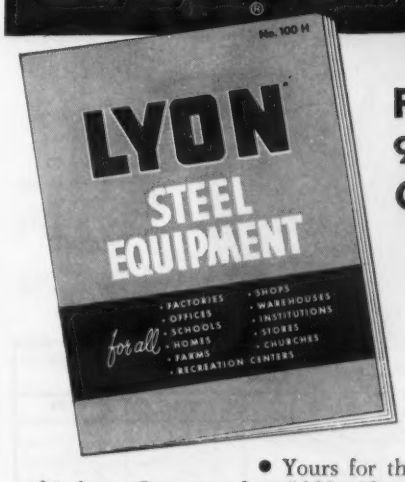
LYON® STEEL EQUIPMENT



FREE! 92 Page Catalog

• Yours for the asking . . . this latest Lyon catalog #100. 92 pages illustrating and describing in detail the world's most diversified line of steel equipment. Whatever your steel equipment requirements, this Lyon catalog will help you fill them better. Send for your copy.

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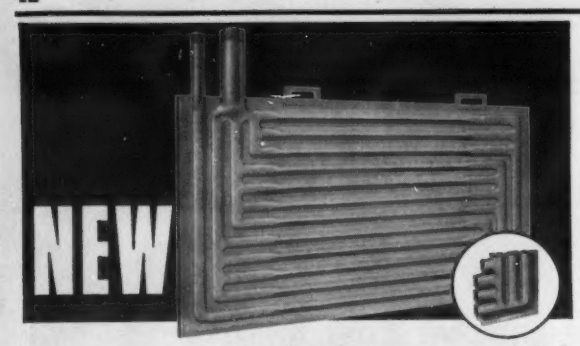

MULTI-ZONE **PLATECOIL®**

An exclusive* Tranter advancement in heat transfer technology

Greater pressure containment (operating pressures up to 250 lbs.) has been achieved with exclusive TRANTER DURAWELD construction and mill-controlled mild TRANSTEEL. FULL-FLO action with protection against condensate trapping plus the time-proven PLATECOIL advantages over pipe coils improve performance and cut cost.

*Patents Applied For

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PLATECOIL® DIVISION
TRANTER MANUFACTURING, INC.
LANSING 9, MICHIGAN

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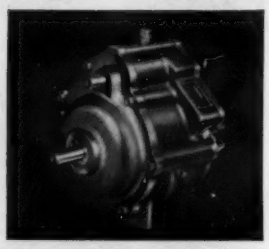
Now there are **3** *Versatile* **REVERSING TRANSMISSIONS**

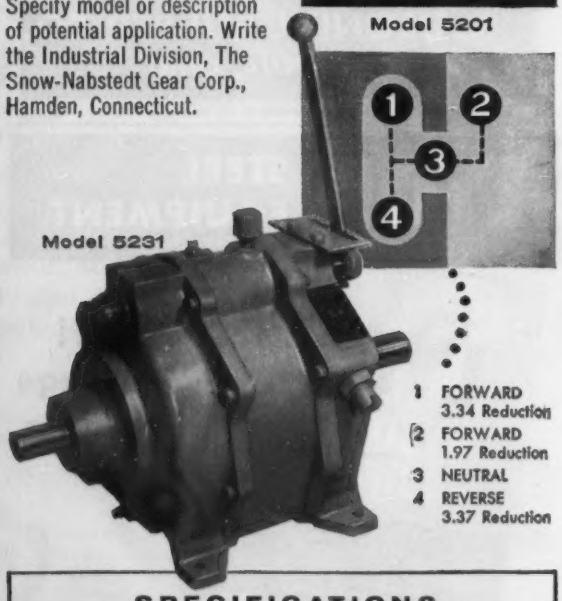
S-N



Model 5108

Model 5201

All designed to meet the demands for single, space saving units that reverse under full load. The newest, Model No. 5231, combines 2 speeds forward, neutral, reverse and reduction. Models 5201 and 5108 combine forward, neutral, reverse and reduction. All are performance proven. Technical literature is available. Specify model or description of potential application. Write the Industrial Division, The Snow-Nabstedt Gear Corp., Hamden, Connecticut.



Model 5231

1 FORWARD 3.34 Reduction
2 FORWARD 1.97 Reduction
3 NEUTRAL
4 REVERSE 3.37 Reduction

SPECIFICATIONS

MODEL NO.	5231	5201	5108
Reduction Forward	1.97:1 & 3.34:1	3.16:1	3.75:1
Ratio Reverse	3.37:1	3.16:1	3.75:1
Power Up To	28 HP	28 HP	8 HP
Maximum Input Torque	1000 in. lbs.	1000 in. lbs.	320 in. lbs.
Maximum Input Speed	2400 RPM	2400 RPM	2400 RPM
Dimensions Long	15 11/16"	11 1/2"	9 1/16"
Dimensions Wide	14"	12 1/2"	10"
Dimensions High	14 3/8"	14 3/4"	10 3/8"

SNOW-NABSTEDT
Transmission Engineers
FOR OVER HALF A CENTURY

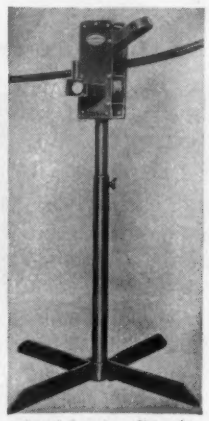
▲ For more details circle NED-389 C on enclosed inquiry slip ▲

FIRE DETECTING THERMOSTAT offered in 135, 190, 250° F models

Series FR semiflush mounting fire detecting thermostats operate on the fixed temperature principle, a bimetallic disc causing a circuit to close when the preset temperature is reached. Models with 135, 190, and 250° F ratings protect areas of 20 x 20 ft or less. Each UL-listed unit has a waterproof and airtight element and is easily installed on a standard octagon junction box. Electrical ratings are 6 to 125 v, 1 amp ac and 6 to 24 v, 0.5 amp dc. Diameter is 3½ in. and height is 23/32 in. • **Notifier Corp.**, 3700 N. 56th St., Lincoln 4, Nebr.

▲ For more details circle NED-390 C on enclosed inquiry slip ▲

CABLE METER STAND permits meter to turn freely



Adjustable in height from 30 to 48 in., the Model HCM stand for cable and wire meters has a portable welded steel base, or it can be lag-bolted to the floor. Meter can rotate freely in the stand, and is suited for systems that are adjustable for various cable reel sizes. A 10 x 14½ x 2-in. bench stand for mounting at a fixed height is also offered. • **Hykon Mfg. Co.**, 163 E. State St., Alliance, Ohio.

▲ For more details circle NED-391 C on enclosed inquiry slip ▲

SWING STAGE HOIST electric, air, hand-powered models

Scaffolding, climber basket, or bosun's chair operation is possible with Electairlift lightweight swing stage hoists. Hand and air-powered models have a capacity of 1000 lb. Electric models, which can be adapted to 115 or 230 v by the turn of a switch, have a 600-lb capacity with a ½-hp motor, or 900-lb capacity with a ¾-hp motor. Pneumatic and electric models are raised and lowered at 18 fpm. Five safety devices, including two in the control mechanism, are incorporated. An overload switch prevents use of electric models in excess of rated capacity. • **Ohio Hoist Mfg. Co.**, 321 S. Beaver St., Lisbon, Ohio.

▲ For more details circle NED-392 C on enclosed inquiry slip ▲

For **HEAVY DUTY WORK!**
Severest Electrical Services

P-506-CE—Plug with Cap

S-506-DB
Socket with deep Bracket

JONES PLUGS & SOCKETS
500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10 and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized *(rust-proofed)*. Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 22 for full details on line
Visit Booth 2535 at the IRE Show.

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING COMPANY
CHICAGO 24, ILLINOIS
DIVISION OF UNITED-CARR FASTENER CORP.

▲ For more details circle NED-393 C on enclosed inquiry slip ▲

Get Complete Ball Information In Accordance With New AFBMA* Standards

HOOVER WILL SEND THIS NEW CATALOG AT YOUR REQUEST

This new catalog details America's widest selection of balls in chrome, stainless and carbon steel, brass, bronze, monel, solar and special materials. Included are tables that show conversions from previous grades to newly established AFBMA grade designations.

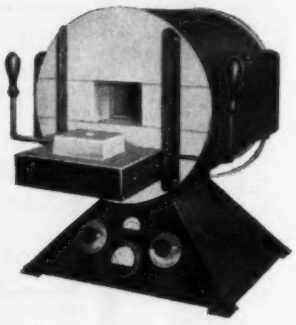
This information enables you to specify readily and accurately the ball you require.

Hoover Offers America's Widest Selection of Standard Balls

hoover®
BALL AND BEARING COMPANY
Ball Manufacturing Facilities
COOLIDGE CORPORATION, MIDDLETOWN, OHIO
HOOVER BALL DIVISION, ANN ARBOR, MICHIGAN
STROM STEEL BALL COMPANY, ERWIN, TENNESSEE
*Anti-Friction Bearing Manufacturers Association

▲ For more details circle NED-394 C on enclosed inquiry slip ▲

Hevi-Duty
"G-07-PT" FURNACE temperatures to 2600° F.



This furnace is designed for high-temperature work where accurate control and uniformity are important. Controls, which provide 48 temperature gradients, and an indicating pyrometer are located in the pyramid base. For greatest uniformity in the heating chamber, three heating elements are installed over and three are beneath the refractory muffle.

Write for Bulletin 957 for full details.

Type	Watts	Chamber W.	Chamber L.	Chamber H.	Price
G-07-PT	3500	4"	7"	2¾"	$585.00

*Operating voltage either 115 or 230 A.C. only.

HEVI-DUTY ELECTRIC CO.
Milwaukee 1, Wisconsin

• LABORATORY FURNACES
TRADE MULTIPLE UNIT MARK
• ELECTRIC EXCLUSIVE

▲ For more details circle NED-395 C on enclosed inquiry slip ▲

Resists Acid Damage and Protects Against Static Hazards!

NATIONALLY KNOWN
UNION MADE CHEM-WEAR®

100% Dynel Anti-Static Industrial WORK CLOTHES

NOW . . . CHEM-WEAR work clothes will solve all plant problems of acid damage and static hazards. And, these always comfortable work clothes do not support combustion! Wear CHEM-WEAR Shirts, Trousers, Coveralls, Laboratory Coats, Work Aprons and be safe.

HOODED COVERALLS
For Boiler Maintenance Men
Heavy blue denim. Completely covers from head to foot.

Write for Catalog

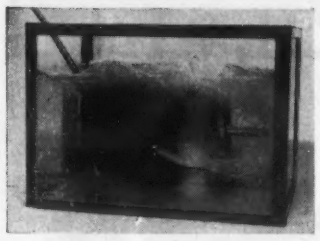
If Not Available at Your Safety Dealer Write to

M. SETLOW & SON, Inc.
Quality Since 1896
MAIN OFFICE & PLANT: 131 Chestnut St., New Haven, Conn.

▲ For more details circle NED-396 C on enclosed inquiry slip ▲

ELECTRIC MOTOR, FULLY SUBMERGED,

cleans itself as it runs in solvent



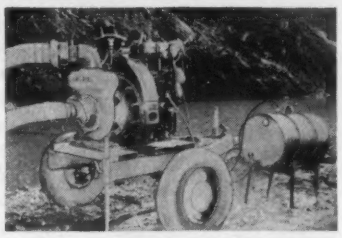
A new, safe motor cleaning solvent which is non - flammable, non-toxic, non-explosive and completely dielectric has been introduced under the trade name of MOTOR BATH by Ranco Industrial Products Corp., 13311 Union Ave., Cleveland 20, Ohio. The material is said to offer a completely revolutionary and entirely new concept to motor cleaning—that of submerging the entire motor in the cleaner and allowing it to clean itself by running electrically. Motors may be cleaned in this manner with a fraction of the time and cost of disassembly. MOTOR BATH may also be sprayed into large motors to clean them in place anywhere in the plant with complete safety. It dries without a greasy or oily residue; will not harm paint on motor housings; and has no effect, softening or otherwise on insulating materials. Motor Bath has no flash point or fire point.

Ranco Industrial Products Corp., 13311 Union Ave., Cleveland 20, Ohio. SKyline 1-6060 *Advt.*

▲ For more details circle **NED-397 C** on enclosed inquiry slip ▲

DE-WATERING PUMP

trailer mounted, diesel powered

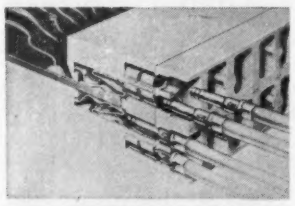


Equipped with Lister-Blackstone diesel engines, line of self-priming and non-self-priming de-watering pumps provide low cost maintenance and fuel economy in the field. Line includes pumps with 40 to 1600-gpm capacities, providing a size for any job in irrigation, construction, or industry. Photo shows Model KF-301 with an ID-2 engine operating against a 10-ft suction lift and discharging through 500 ft of 4-in. hose. • **Carver Pump Co.**, 1056 Hershey Ave., Muscatine, Iowa.

▲ For more details circle **NED-400 C** on enclosed inquiry slip ▲

PRINTED CIRCUIT CONNECTOR

features multipoint contact



This Edge-On Hyfen, an edge-type printed circuit connector, features bifurcated, undulating spring design which assures multipoint contact. The small, lightweight connector uses crimp-type, snap-in tips with insulation grips. Tips accommodate combinations of wire sizes as well as single wires. Closed entry face on board side protects the spring and helps align warped circuit boards. Design allows low board insertion and withdrawal forces. • **Burndy Corp.**, Omaton Div., Norwalk, Conn.

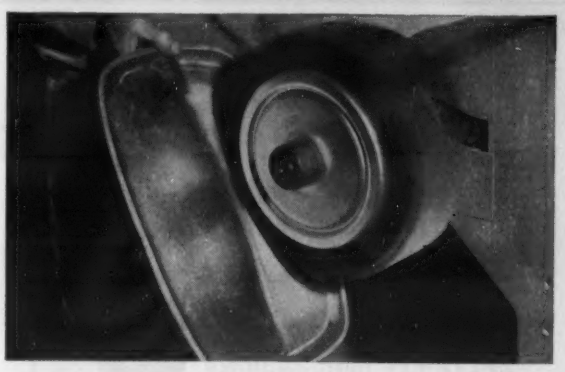
▲ For more details circle **NED-401 C** on enclosed inquiry slip ▲

HIGH CAPACITY WELDER

will not discolor coated materials

Blemish - free welding of vinyl-clad or lacquer - coated steel, chrome and copper plated metals, and various nonferrous metals is possible with this capacitor discharge type "spike" welder. It produces pulses of over 100,000 amp of 1 millisecond duration from standard power lines and is capable of 500 welds per minute. Machine also joins pieces of ⅛-in. aluminum. The welder develops a minimum of heat in the weld zone which does not spread through the work because of the short weld duration. • **Metal/Craft Co.**, Weldex Div., 3300 Doris, Detroit, Mich.

▲ For more details circle **NED-402 C** on enclosed inquiry slip ▲



FOR A FAST, EASY, ECONOMICAL FINISH

The Vonnegut Brush-Backed Polishing Head is an indispensable item for finishing, be the problem a decorative satin, pre-buff operation or surface preparation for paint. The Vonnegut Head will clean, sand, blend, polish and deburr a variety of materials—wood, rubber, plastics, ferrous and nonferrous metals—both plain and contoured surfaces. Ask for Price List and Bulletin No. 102.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION

2530-J WINTHROP AVENUE, INDIANAPOLIS 5, INDIANA

▲ For more details circle **NED-404 C** on enclosed inquiry slip ▲

TO CUT PRODUCTION COSTS

You save money every time you handle parts with Nestier Boxes and Baskets. They stack when full, nest when empty. You need no racks, waste no storage space, require no other containers even for degreasing. Nestier units travel in stacks on pallets, conveyors or moving belts. Tiered on work tables or hung from Hopper Racks they put parts in easy reach of your assemblers. Nestiers are die-cut from sheet steel in 5 sizes, 12" to 36" long. Write for information today. Dept. D-3

NESTIER® FIRST IN SMALL PARTS HANDLING

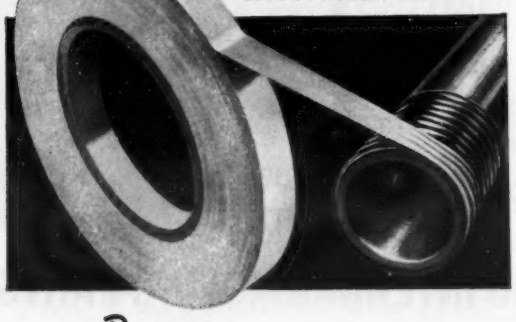
NESTIER CORPORATION Subsidiary of THE METAL SPECIALTY CO.
4519 Este Ave., Cincinnati 32, Ohio

▲ For more details circle **NED-405 C** on enclosed inquiry slip ▲

• whatever the threaded joint . . . •

NEW **PERMACEL®**
RIBBON DOPE
TRADE-MARK
THREAD SEALANT

The original self-lubricating, compressible, solid sealant, made of TEFLON* for threaded pipe joints.
*Du Pont Trade-mark



PERMACEL *New Brunswick, N.J.*
TAPES • ELECTRICAL INSULATING MATERIALS • ADHESIVES

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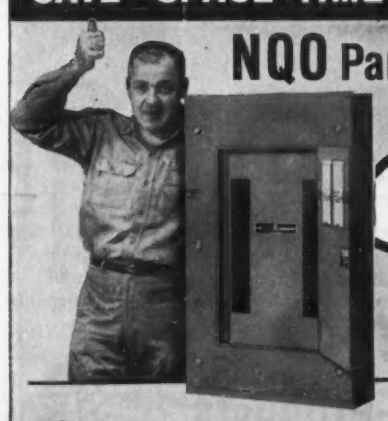
Same **PANELBOARD COMBINES** *Both* **Lighting and Power Loads**

SAVE—SPACE • TIME • MONEY

NQO Panelboard



Heavy Duty Construction!

100 AMP through 600 AMP MAINS

Write for the complete story. Address Square D Company, 1601 Mercer Road, Lexington, Kentucky

SQUARE D COMPANY
wherever electricity is distributed and controlled

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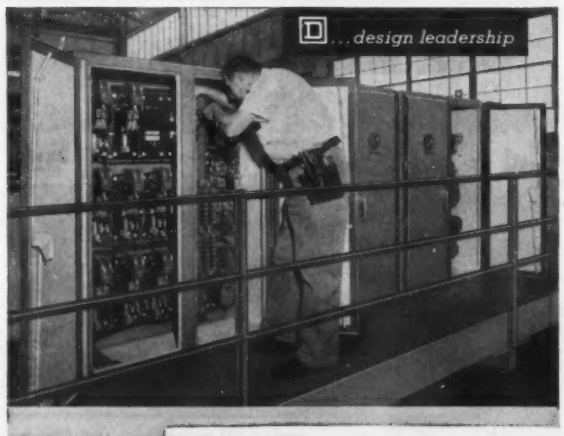


NEW! EC&M Front-Connected DC Control

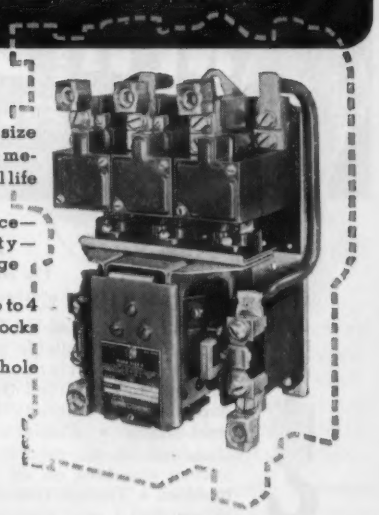
- Eliminates need for back aisle space
- Reduces catwalk width up to 20 inches
- Only one man required for maintenance
- Available in 2, 3 or 4 decks to suit headroom requirements

Write for Bulletin 6121. Square D Company, EC&M Division, 4500 Lee Road, Cleveland 28, Ohio

SQUARE D COMPANY
EC&M DIVISION • CLEVELAND 28, OHIO
wherever electricity is distributed and controlled

▲ For more details circle **NED-403 C** on enclosed inquiry slip ▲

New SIZE 4 STARTER is 33% smaller!



- Greatly reduced size with no sacrifice in mechanical or electrical life
- Easy maintenance—full accessibility—quick contact change
- Room for up to 4 double-circuit interlocks
- Simplified 3-hole mounting

Write for details. Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

SQUARE D COMPANY
wherever electricity is distributed and controlled

▲ For more details circle **NED-406 C** on enclosed inquiry slip ▲

VIBROLATOR®

VIBRATION INDUCERS

"WORLD'S QUIETEST VIBRATOR"

MOVE, FEED, SIFT, OR COMPACT ANY MATERIAL

Only one moving part
Self-starting always
Needs no lubrication
Works perfectly on wet or dirty air
Sparkfree

MOVES MATERIALS OUT OF HOPPERS, DOWN CHUTES, THROUGH SCREENS.

SATISFACTION GUARANTEED OR YOUR MONEY BACK.

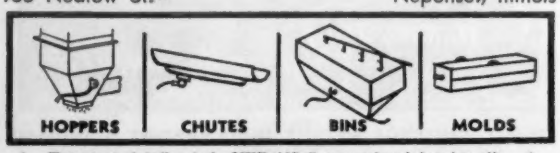
"VIBROLATOR" vibration inducers are available in over 30 models and sizes. *Call your distributor or write for free catalog.*

"VIBROLATOR" is Martin Engineering's registered trade mark for vibration inducers and vibrator accessories.

MARTIN ENGINEERING COMPANY

Largest producer of rotary vibrators

155 Nedlow St. Neponset, Illinois



▲ For more details circle NED-407 C on enclosed inquiry slip ▲

NEW Snap-on

MAGNETIC SOCKETS

last 10 times longer

Cutaway showing socket, magnet, self-tapping screw. Socket sizes: 1/4-in. drive for 1/4, 5/16, 3/8, 7/16-in. sockets; 3/8-in. drive for 5/16, 3/8, 7/16, 1/2, 9/16-in. sockets; 1/2-in. drive for 7/16, 1/2, 9/16-in. sockets.

On actual customer test, this new *Snap-on* socket drove 112,320 self-tapping screws. On the same job, a competitive socket wore out after driving only 10,530 screws.

Re-use your magnets—Save up to 50%

You can get these long-life sockets without the magnets. Just tap magnet out of the worn-out socket — insert it in the new socket with an inexpensive *Snap-on* magnet inserter. Cut your costs by 50 percent.

Ask your Snap-on man or write us direct.

SNAP-ON TOOLS

FOR ALL INDUSTRY

8110-C 28th Avenue • Kenosha, Wisconsin

▲ For more details circle NED-408 C on enclosed inquiry slip ▲

BIG POWER -in a portable package!

NEW! BEEBE RATCHET-HOISTS

6 MODELS • 12 CAPACITIES
750 Lbs. to 4000 Lbs.

"Snap-On" Quick Reversing Handles

Manufactured by **BEEBE BROS.**

The most famous name in hand winches for over 40 years!

Here's a new line of RATCHET-HOISTS backed by the reliable name of BEEBE BROS. • Superior to anything on the market • Simplified design with fewer parts • Extra strength from oversize steel shafts • Cable wind-up handles standard on all models • Triple-hook system standard on all models • Safety handles • Design tested for overload • Warranted 1 year against defective parts.

Ask Your Industrial Distributor About the New Line of Beebe Ratchet-Hoists

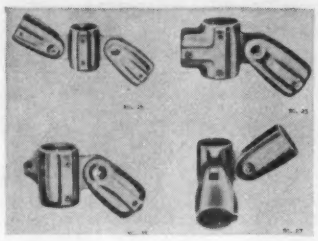
BEEBE BROS. *Manufacturing Co.*

2732 Sixth Avenue South • Seattle 4, Wash.

Beebe Winches—strongest geared power for their weight in the world

▲ For more details circle NED-409 C on enclosed inquiry slip ▲

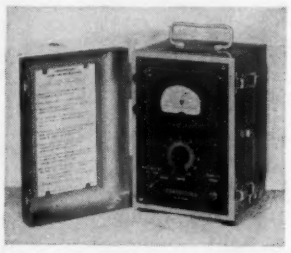
ADJUSTABLE RAILING FITTINGS of aluminum alloy, used with pipe



These four Speed-Rail adjustable fittings are suited for railing construction as well as for angle braces, supports, and racks. Added to line are a cross, stair landing tee, side outlet ell or tee, and double side outlet or tee, all adjustable through 180 degrees. Made of noncorroding aluminum alloy, they are used with standard pipe or tube without threading or welding. They can be re-used. • **Hollaender Mfg. Co.,** 3841 Spring Grove Ave., Cincinnati 23, Ohio.

▲ For more details circle NED-410 C on enclosed inquiry slip ▲

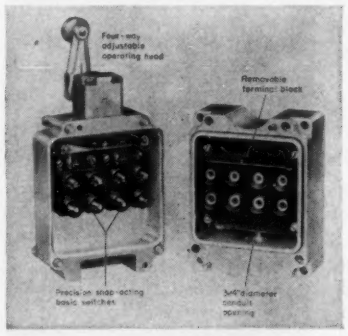
ELECTRIC GROUND TESTERS are portable and self-contained



Direct reading of ohms resistance of an earth ground is provided with three models of Vibroground testers with ranges of 0 to 3 ohms to 0 to 3000 ohms. Light in weight, self-contained, and equipped with battery-operated vibrator power supplies, instruments are fully portable. • **Associated Research, Inc.,** 3777 W. Belmont Ave., Chicago 18, Ill.

▲ For more details circle NED-411 C on enclosed inquiry slip ▲

LIMIT SWITCH is double-duty, plug-in unit

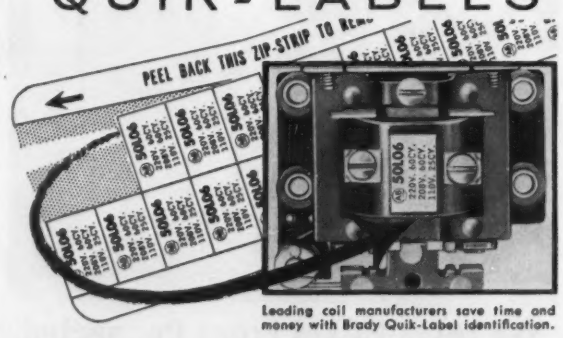


This 301LS1 plug-in limit switch can do the work of two separate limit switches. It contains two 2-circuit double - break switches which control four isolated circuits. When moved to the left, roller lever actuator operates one of these basic switches; when moved to the right, it operates the other. Units are rated up to 10 amp at 120, 240, and 460 v ac; and 0.8, 0.4, and 0.1 amp at 115, 230, and 550 v dc, respectively. Switch plugs into the 18PA3 mounting block which is permanently wired and mounted to machine, and is thus replaced quickly. Complete unit is oiltight. • **Minneapolis-Honeywell Regulator Co.,** Micro Switch Div., 205 S. Chicago Ave., Freeport, Ill.

▲ For more details circle NED-412 on enclosed inquiry slip ▲

BRADY *Self-Sticking*

QUIK-LABELS®



Leading coil manufacturers save time and money with Brady Quik-Label identification.

ANY SIZE! ANY SHAPE! ANY COLOR!

- Special Labels, Markers, Seals, Signs . . . tailor-made to your specifications. Mounted on Blue-Streak® Dispenser Cards for fast, distortion-free application.
- Choose from 400 different self-sticking materials — including Vinyl, "Mylar*," Acetate films, Cellophane, Vinyl-Cloth, Glass Cloth, Aluminum Foil, and many more plastic films, cloths, papers and foils.
- Fast, low-cost marking; stick to metal, glass, wood or plastics. Write for Bulletin 132 giving complete details and case histories. Free Test Samples on request.

*Du Pont's Registered Trade Mark

W. H. BRADY CO. 769 W. Glendale Ave., Milwaukee 9, Wis.

Manufacturers of Quality Pressure Sensitive Tape Products.

Est. 1914 81

▲ For more details circle NED-413 C on enclosed inquiry slip ▲

TO INCREASE PRESS EFFICIENCY

MINSTER® CLUTCHES FOR PRESS CONVERSIONS

MINSTER Combination Air Friction Clutch and Brake — made by a press manufacturer who knows your problems.

Here's why it is profitable to convert to Minster Clutches:

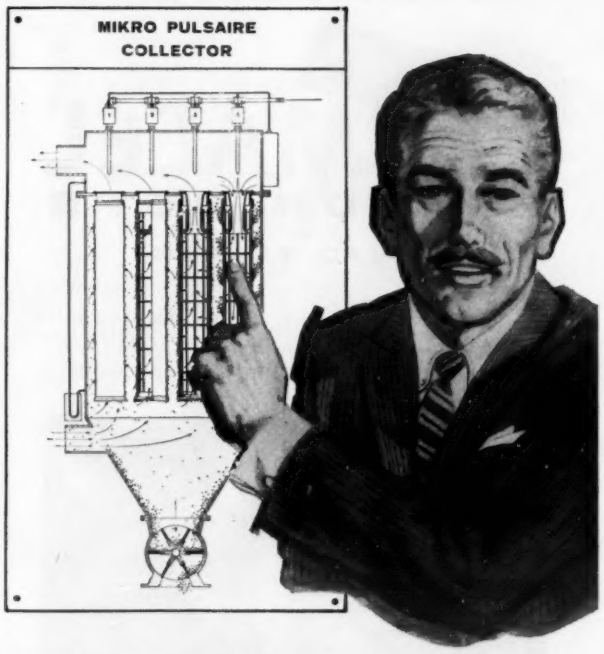
- Eliminates down time because of clutch failure
- Reduces maintenance by eliminating costly and frequent parts replacement
- Increases die life because of smooth, shock-free clutch engagement
- Reduces operator fatigue and improves safety because press is easier to operate, easier to control
- More productive cycles per hour on single cycle operation
- Easier, more rapid die setting

Bulletin CC 57 describes Minster Clutches for press conversion. Copy by request on company letterhead.

THE MINSTER MACHINE COMPANY
MINSTER, OHIO

▲ For more details circle NED-414 C on enclosed inquiry slip ▲

MIKRO PULSAIRE COLLECTOR



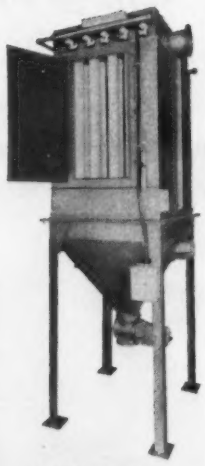
NO INTERNAL MOVING PARTS...

not even valves or dampers adjacent to collector!

That's why the MIKRO-PULSAIRE is the true economy dust collector . . . absolutely no internal mechanical moving parts! In radically simplified operation, filter elements are cleaned in a continuous cycle by introduction of momentary jets of high-pressure air through specially-contoured venturis mounted above each filter cylinder, individually controlled by a timed solenoid.

World-wide installations are proving the economy of the MIKRO-PULSAIRE through reports of drastically reduced maintenance down time . . . with filtering efficiencies of 99.9% plus, on a wide variety of dusts.

Write for Bulletin 52A, or call in the Mikro representative. Ask about the new MIKRO-PULSAIRE modular construction units with capacities from 20 cfm to any known requirement.



MIKRO-PULSAIRE Model 20-6

MIKRO-Products

PULVERIZING MACHINERY

A Division of Metals Disintegrating Company
Division of American-Marietta Company

28 Chatham Rd. • Summit, N. J.

SPAN THE GLOBE

▲ For more details circle NED-415 C on enclosed inquiry slip ▲

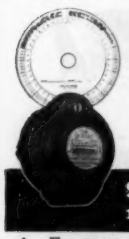
I SAVED MY COMPANY

$3,000 A MONTH

(Name of company furnished on request)

A simple device that automatically records minutes of busy and idle time of production equipment and lift trucks enables many department managers to make boasts like this.

If a machine is idle, the Service Recorder reports exactly when and how long the delay lasted. Records are permanent, easy to read, and easy to file. They enable you to improve scheduling, determine the cause of down time, and help you set rates.



Mechanical models attach to machines or lift trucks. Electrical models may be located remote from machines.

Prices of mechanical models are *as low as $40.*

Send for an illustrated folder with full information

SERVICE RECORDER COMPANY
1013A ROCKWELL AVE. • CLEVELAND 14, OHIO

▲ For more details circle NED-416 C on enclosed inquiry slip ▲

more ACCURATE • more CONVENIENT than any you've known!

THIS FEDERAL MIKEMASTER has an easily read Indicator instead of the barrel graduations usually found on micrometers: There's no need to interpret a vernier. Finest measurements are read directly from Dial's clearly calibrated scale graduated in .0001". Mikemaster always *gages with same pressure.* You can gage *fast* since there's no need of carefully applying correct gaging pressure. If it's *duplicate* parts you're measuring, you'll find the push button retracting anvil and tolerance hands particularly useful, permitting tool to be used as an Indicating Snap Gage.

Mikemaster is built to last, with sturdiness to spare, and the measuring surfaces are lapped tungsten carbide. Ask to see it . . . and try it on your work.

FEDERAL PRODUCTS CORPORATION
6173 Eddy Street • Providence 1, R. I.

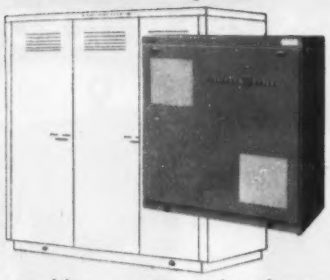
Ask FEDERAL *First*

FOR RECOMMENDATIONS IN MODERN GAGES . . .
Dial Indicating, Air, Electric, or Electronic—for Inspecting, Measuring, Sorting, or Automation Gaging

▲ For more details circle NED-417 C on enclosed inquiry slip ▲

Reliance V★S Drives

more power in 35% less space!



Super 'T' V★S Drives are efficient, integrated units—with a wide range of stepless variable speeds from in-plant a-c. circuits.

New Super 'T' V★S units are simple to install and maintain. Only the drive motor needs to be placed at the machine . . . power unit and operator's control can be located wherever space and convenience permit. These new units utilize Class B insulation . . . resulting in a more compact package. 100% overloads of one minute duration are accomplished without failure.

WRITE FOR NEW RELIANCE V★S BULLETIN Number D-2506. Gives you complete information. Or call your nearest Reliance Sales Engineer for delivery schedules on full line, 1—350 hp. D-1648

RELIANCE ELECTRIC AND ENGINEERING CO. •
243A2 CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

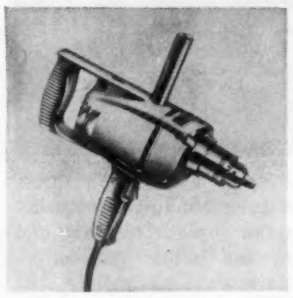
▲ For more details circle NED-418 C on enclosed inquiry slip ▲

PRESSURE REGULATOR
foot-operated type for 125 psi

Foot pressure applied at any point around the circular tread of this pressure regulator renders it operative. Self-relieving unit controls air and inert gases up to 125 psi and flows up to 2 cfm. Device has a steel housing, corrosion resistant internal parts, rubber pad to protect floor and prevent sliding, and 10 ft of 1/8 x 1/4-in. flexible twin plastic tubing. Flexible nylon or metal braided tubing is available for severe abrasion conditions. • **Air Specialty Co.**, Box 5642, Baltimore 10, Md.

▲ For more details circle NED-419 C on enclosed inquiry slip ▲

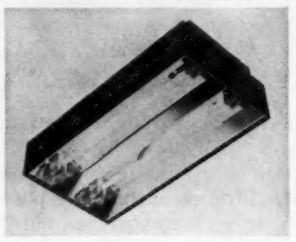
REVERSIBLE DRILL
has universal ac-dc motor



Rated 1/2-in., Model R550-3 portable electric drill is reversible and has ample capacity for heavy duty industrial service. It has a universal motor for operation on alternating or direct current, mirror finished housing, multiple thrust bearings, Jacobs geared chuck, helical gears, and a three-conductor cord. • **Ram Tool Corp.**, 411 N. Claremont Ave., Chicago 12, Ill.

▲ For more details circle NED-420 C on enclosed inquiry slip ▲

INFRARED HEATERS
in up to 3-lamp, 15,000-w units



Heat is projected to specific areas by these Luminator reflector infrared heating units. Heaters use G-E T-3 tubular quartz infrared lamps with filament temperatures in excess of 4000° F. Infrared heat projected warms only people and surfaces, not the surrounding air. Units are well suited for high bay mounting in aircraft hangars, maintenance shops, and warehouses, and for outdoor loading platforms, walkways, and entrances. Heaters are available in 1, 2, and 3-lamp fixtures rated 500-5000, 1000-10,000, and 1500-15,000 w, respectively. Lengths range from 10 1/2 to 55 1/2 in. • **Luminator, Inc.**, 120 N. Peoria St., Chicago 7, Ill.

▲ For more details circle NED-421 C on enclosed inquiry slip ▲

Duty Master

a brand new A-c. motor

New design gives users better protection from the inside out, simplified lubrication, better response and improved all around performance. The Duty Master a-c. line, from protected to totally-enclosed, explosion-proof, 1 to 250 hp. is ready for delivery *now.*

NEW DUTY MASTER BULLETIN now available with specific information about its advanced engineering qualities and design features. Write for B-2106. B-1646

RELIANCE ELECTRIC AND ENGINEERING CO. •
243A CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
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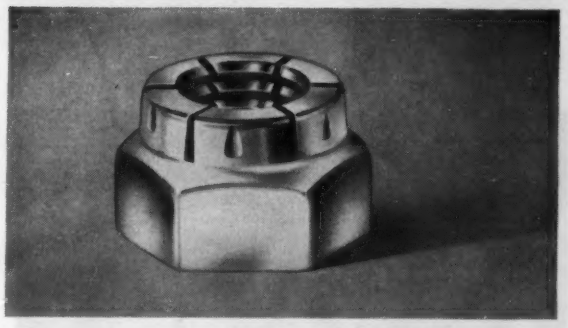

Self-locking, vibration-proof FLEXLOC serves as locknut or stopnut

- Locks *without seating*—stays put wherever wrenching stops
- Holds tight despite impact, shock, vibration
- Simplifies design because it is one-piece—no auxiliary locking devices needed
- Can be readily removed, repeatedly reused
- Sizes #0-80 through 2"-4 1/2
- In alloy steel, stainless steel, aluminum, brass

See your authorized industrial distributor. Or write SPS—manufacturer of precision threaded fasteners and allied products in many metals.

INDUSTRIAL FASTENER Division **SPS**
JENKINTOWN 24, PENNSYLVANIA

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REEVES Vari-Speed MOTOR PULLEY

Get variable speed simplicity and economy with REEVES!

This Motor Pulley design has only *three main parts:* two smooth-faced, cone-shaped discs, one mounted in fixed position on the shaft, the other to slide laterally on the hub of the fixed disc. Third part is the belt tension spring which automatically maintains pressure on the sliding disc at all output speeds. Smooth stepless speed changes result by adjusting sliding motor base. Available in nine sizes, 1/6 through 15 hp. to fit either new or old NEMA motors. Speed ranges up to 4:1.

WRITE TODAY for Reeves Bulletin No. G-5812 for all the facts, or call your nearest Reliance Sales Engineer. G-1662

RELIANCE ELECTRIC AND ENGINEERING CO. •
243A3 CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

▲ For more details circle NED-424 C on enclosed inquiry slip ▲

Master Gearmotors

matched motor and right angle reducer in one compact power package

Reduce engineering and assembly costs—eliminate separate components with this Master Gearmotor. No high speed couplings, V-belts, chains and sprockets required. Takes up less space—reduces mounting plates and maintenance. Available in ratings from 1/6 to 125 hp. in right angle, parallel or in combination. Wide choice of electrical and mechanical modifications . . . vertical, horizontal flange, and face mountings; output shaft over, under, left or right.

Write for full information, or call your nearest Reliance Sales Engineer. E-1647

RELIANCE ELECTRIC AND ENGINEERING CO. •
243A1 CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

▲ For more details circle NED-425 C on enclosed inquiry slip ▲

NEW FROM WHITING

PRESSUREGRIP vacuum lifter

Versatile Whiting Pressuregrip vacuum systems pick up even rough textures, like diamond tread plate, plywood, or concrete. Special narrow grippers are available to lift rails, beams, or even pipe.

UNDER-THE-HOOK PRESSUREGRIP UNITS (shown above) speed overhead crane operation—eliminate time-consuming chain rigging—cut materials handling costs.

CUSTOM PRESSUREGRIP VACUUM FEEDING EQUIPMENT can be designed to your requirements. Whiting engineers are at your service to automate many repetitive operations.

WRITE TODAY FOR NEW BULLETIN V-100
"Whiting Pressuregrip"

Whiting Corporation, 15660 Lathrop Avenue, Harvey, Illinois

WHITING

▲ For more details circle NED-426 C on enclosed inquiry slip ▲

"Select your proper bending machine from the NEW PEDRICK LINE BULLETIN. Ask for it now."

BEND WITH PEDRICK

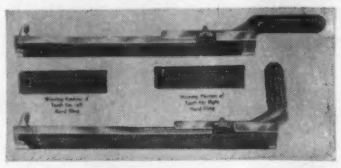
▲ For more details circle NED-427 C on enclosed inquiry slip ▲

Available in Stainless Steel, Silicon Bronze, Brass, Aluminum and Steel

JACOBSON NUT MFG. CORP. Kenilworth, New Jersey

▲ For more details circle NED-428 C on enclosed inquiry slip ▲

SELF-CLEANING FILE
wrench oscillates rows of teeth



Usable on soft or hard metals, wood, and plastics, the Kwick Kleen file can be cleaned of accumulated shavings in less than a minute. A special wrench is installed on the end of the file and oscillated back and forth. This creates a shearing action of the teeth in the blades that breaks up accumulation. File can then be tapped or blown clean. Handle can be reversed for horizontal or vertical gripping. File is made in mill and shell types, in four sizes of 10 to 24 teeth per inch. • **Gordon Associates, Inc.**, First Street, Derby, Conn.

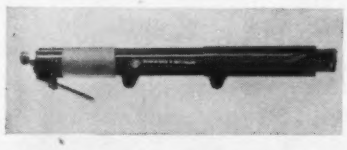
▲ For more details circle NED-429 C on enclosed inquiry slip ▲

BRAZING TRAINING COURSE
kit contains materials, instructions

Three comprehensive textbooks and all parts, materials, and supplies needed to perform the lesson exercises are contained in this packaged, self-study training course on the principles and techniques of silver alloy brazing. Course is based on a three-day brazing class which has been conducted monthly for 13 years. It is designed for inplant training and covers fundamentals, design, and actual production. Price is $25. • **Handy & Harman**, Training Div., 82 Fulton St., New York 38, N. Y.

▲ For more details circle NED-430 C on enclosed inquiry slip ▲

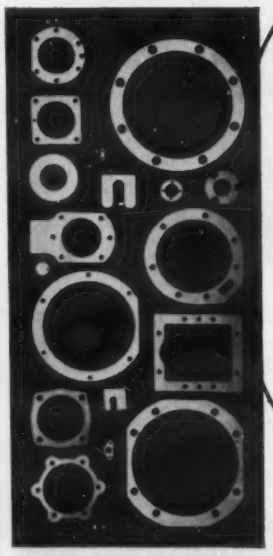
CLEANING & DESCALING GUN
air-operated model is compact



Over-all length of 13.5 in. and diameter of 1.25 in. enable the Model 1B Vonarx air gun to perform cleaning, derusting, and descaling operations in small openings and hard-to-reach spots. Smaller and more compact than the original model, it weighs 3.3 lb and has little recoil, making possible one-hand use. Swiss-made gun operates on 80 to 100 psi compressed air and is equipped with 2 or 3-mm stainless steel needles controlled by a trigger in the handle. Needles strike the surface at 50 strokes per second. The air blowing through the piston cleans the working surface of particles. Needle life is over 200 hr. Tool removes weld slag, cleans castings, removes plaster and concrete, and prepares various surfaces for painting. • **Swissair Tool Corp.**, 7775 Sheridan Dr., Buffalo 21, N. Y.

▲ For more details circle NED-431 C on enclosed inquiry slip ▲

EASY WAY TO CUT COSTS on GASKETS, WASHERS and SHIMS



A wide variety of dies accumulated over more than 50 years of service to industry, enables Chicago-Wilcox to supply many of your gasket, shim and washer needs without a die charge.

Whether you need just a few items or large quantities, these stock dies make it easy for you to save money and get faster delivery. Available in metallic, non-metallic and plastics to meet your production requirements.

Find out about WIL-PAK PLASTIC SHIM STOCK that identifies thickness by both color and gauge number. Write for Bulletin No. 570.

Write for Stock List and Prices.

CHICAGO-WILCOX Mfg. Co.
7713 South Avalon Avenue, Chicago 19, Illinois

▲ For more details circle NED-432 C on enclosed inquiry slip ▲

Cut Pallet Handling Costs With

■ MOTO-TRUC builds a full line of dependable pallet trucks that cost less to own and less to operate than competitive models. They are small and compact to fit in the tightest quarters, yet their rugged simplicity keeps them on the job longer . . . assures top performance on even the toughest jobs.

Get your Free MOTO-TRUC Catalog! Ask for walkie bulletin #56W.

World's Largest Exclusive Manufacturers of Walkie Trucks

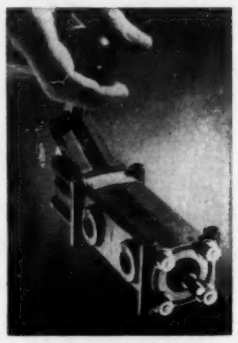
The MOTO-TRUC Company
1961 EAST 59th ST. • CLEVELAND 3, OHIO

▲ For more details circle NED-433 C on enclosed inquiry slip ▲

Typical Control Functions solved by AIR CIRCUITRY

Automatic cycling, station transfer, and automatic reset are typical control functions solved by the "D" PILOTAIR® Valve. Another of Westinghouse Air Brake's many AIR CIRCUITRY components, the "D" PILOTAIR® Valve is a spool-type directional valve that can be operated by a lever, button, cam, solenoid, air pilot, pedal or treadle.

The valves are available in two, three, and four-way operation, two and three position, open neutral, lap neutral and vented neutral. Port sizes are ¼" and ½" ips. Operators may be on either or both ends. Maximum operating pressure: 250 psi.



Westinghouse Type "D" Pilotair Valve

DESIGN FEATURES. A new design of seal and segment construction gives the "D" PILOTAIR® Valve increased capacity and requires a minimum of maintenance. By rotating operators, their mounting brackets and any of their ports in 90° steps, over one-hundred thousand combinations may be obtained. They operate in any position with air, gas, water and most oils. The "D" PILOTAIR® Valve can satisfy any of your directional valve needs. For more information, ask for catalogue A4-75.01.

See the Yellow Pages under Cylinders for the Name of Your Local Distributor

WESTINGHOUSE AIR BRAKE COMPANY
INDUSTRIAL PRODUCTS DIVISION, WILMERDING, PENNSYLVANIA

▲ For more details circle NED-434 C on enclosed inquiry slip ▲

PERFECTION Flanged and Motorized Worm Gear SPEED REDUCERS

Licensed under Pat. 2,868,031

Perfection Motorized Worm Gear Speed Reducers are available in 956 different combinations, with ratios ranging from 5 to 1 to 60 to 1, and in capacities from 1/6 H.P. to 5 H.P. This line of complete Motorized Reducers is available from stock for immediate delivery. Perfection "C" flange Reducers may be ordered complete with motor or without motor, to be used with a motor of your own choice. Write for your free copy of our new 28 page catalog No. M-140.

AMERICAN STOCK GEAR DIVISION
PERFECTION GEAR COMPANY HARVEY, ILLINOIS

▲ For more details circle NED-435 C on enclosed inquiry slip ▲

WIN OVER *COLD* with nonfreezing SILICONE LUBRICANTS

• efficient lubricity from —100 to 350 F

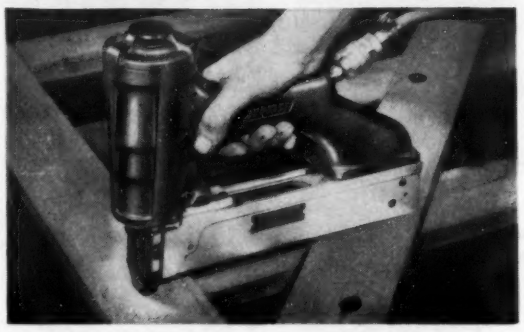
Neither COLD nor heat can "freeze" bearings, pins and other moving parts lubricated with heat stable Dow Corning silicone greases. They stay efficient at temperatures far below and above the best organic oils and greases . . . to speed up processing, reduce maintenance and cut power consumption of cold equipment.

Write for FREE BOOKLET on heat, cold and oxidation resistant oils and greases! Address Dept. 5403.

first in silicones **Dow Corning CORPORATION** MIDLAND, MICHIGAN

▲ For more details circle **NED-436 C** on enclosed inquiry slip ▲

NEW! the *DUO-FAST* S-762 Staple Gun



5 times faster than hand nailing!

Staple-nailing with this new S-762 is speedy, automatic, efficient. It wallops home heavy, 16-gauge staples, as long as 1½", at 60 pounds air pressure.

Use this portable, one-hand staple-nailer on crates, assembling boxes, making expendable skids, and many other nailing jobs. It's a money saver!

Send for Bulletin FT-43 on the new, fully guaranteed DUO-FAST S-762 Staple Gun. Just one of the 150 DUO-FAST models.

DUO-FAST / **FASTENER CORPORATION** 3758-60 River Road Franklin Park, Ill. 9558

▲ For more details circle **NED-437 C** on enclosed inquiry slip ▲

NEW! Rapisteel® slotted angle

* more design flexibility
* greater structural strength
* superior galvanized finish

Save time, cut materials and construction costs with Rapisteel by Rapistan. New design builds stronger structures faster — lets you erect storage racks, work benches, mezzanines, dollies, electrical panel boards — any construction idea you have. Completely re-usable, lifetime resistance to corrosion.

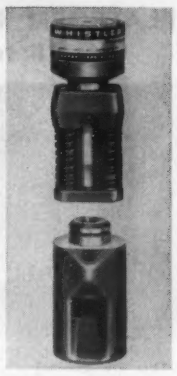
RAPISTEEL CONSTRUCTION IDEA MANUALS — FREE!
Write today for these new, illustrated Rapisteel construction guide books

Rapistan® slotted angle

The RAPIDS-STANDARD CO., Inc.
Dealer Products
762 Rapistan Building
Grand Rapids 2, Michigan

▲ For more details circle **NED-438 C** on enclosed inquiry slip ▲

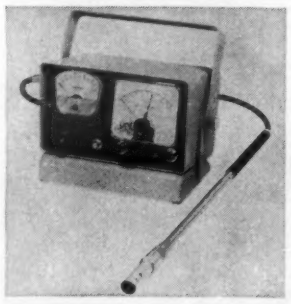
MAGNETIC DIE RETAINER over-all size decreased



Reduced over-all size of these punch and die retainer units for Whistler Magna-Dies permits closer mounting and more holes to be pierced in one operation. Retainers can be used with all existing Magna-Die equipment. Magnetic perforating punches and dies are now stocked in 0.001-in. increments from 0.100 through 0.500 in. diameter. • **S. B. Whistler & Sons, Inc.**, 756 Military Rd., Buffalo 23, N. Y.

▲ For more details circle **NED-439 C** on enclosed inquiry slip ▲

GAS DETECTOR gives alarm at unsafe level



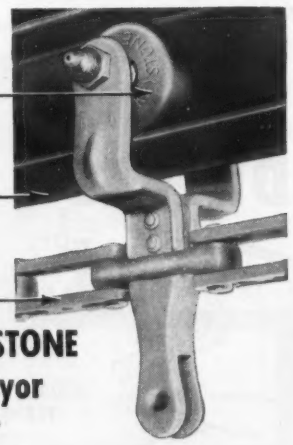
Indicator meter of the Model 521 gas detector is calibrated in per cent of lower explosion limit of a specific gas. It gives visual indication and sounds a buzzer alarm when gas concentrations reach an unsafe level. Unit functions as a portable instrument with a probe type element or as a fixed indicator-alarm with up to 100 ft of cable to the detector element. Operation is on solid-electrolyte nickel-cadmium battery or 110 v ac. Auxiliary contacts are provided for external alarm or shut-down circuits. The 12-lb, 5 x 7 x 8-in. instrument sells for $425. • **Houston Instrument Corp.**, Box 22234, Houston 27, Tex.

▲ For more details circle **NED-440 C** on enclosed inquiry slip ▲

MOTOR CONTROL CENTERS also for lighting, welding, heating

Bus capacity from 200 to 2000 amp for voltages from 110 to 600 v is built into this line of motor control centers. Available either as fusible or circuit breaker combination units, they consist of two or more starters fed from a common bus and are often attached to transformers or switchgear to form a substation. Individual units control such electrical loads as motors, lighting, welding, and heating. Plug-in design facilitates moving from one location to another as needed. All control components of like size are interchangeable anywhere in the control panel. Mechanical interlocks shut off current when the cubicle door is open. • **Allis-Chalmers Mfg. Co.**, 918 S. 70th St., Milwaukee 1, Wis.

▲ For more details circle **NED-441 C** on enclosed inquiry slip ▲



RAPISTAN®-KEYSTONE Overhead Conveyor is built stronger to perform better

Cut your new overhead conveyor installation costs, reduce your maintenance and operation costs with R-K overhead conveyor. Patented R-K chain has 10-to-1 safety factor. Rugged trolleys handle loads up to 135 lbs. each. Economical 228 systems handle any light to medium duty jobs. Write today for Bulletin R-K 59 showing many examples.

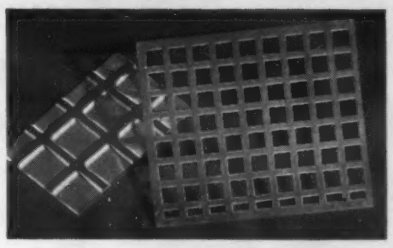
Rapistan®-KEYSTONE, INC.
751 Rapistan Building, Grand Rapids 2, Michigan

▲ For more details circle **NED-442 C** on enclosed inquiry slip ▲

NEW DEEP-ETCH

MATERIAL FOR CHEMICAL MILLING

***Kodak Metal-Etch Resist . . .* speeds up, simplifies, opens new chemical milling applications**



This photo sensitive resist ends time-consuming handwork, allows close-limit accuracy in deep-etch weight reduction and parts manufacture. Also reproduces fine-line detail as in plating, dial and nameplate making. Withstands acids, alkalies, electrolytic fluids . . . adheres well to aluminum, titanium, magnesium, stainless and other alloy steels. Makes volume production possible because of its high stability, strict uniformity. Send for detailed brochure: *Etching, Chemical Milling & Plating with Kodak Metal-Etch Resist.*

Text for this advertisement was set photographically.

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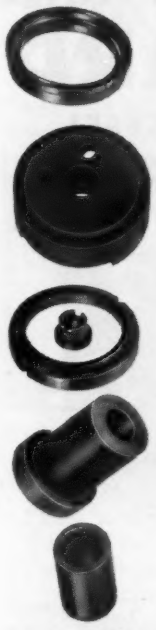
Graphic Reproduction Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

▲ For more details circle **NED-443 C** on enclosed inquiry slip ▲

HIGH-TEMPERATURE GRAPHITE

for Bearings & Seal Rings



Widely used in jet engines, and in other high-temperature mechanical applications, Stackpole Grade 469 shows remarkably low wear and low friction at temperatures where most other materials fail—1000° to 1200° F. Withstands corrosive chemicals and gases. Self-lubricating. Will not melt, fuse, seize or spall. Exclusive Stackpole Treatment will not bleed out at elevated temperatures.

Available as blanks, rough-cut, or finished pieces to your specifications. Hundreds of other carbon and graphite grades for mechanical applications. Submit your requirements to STACKPOLE CARBON CO., St. Marys, Pa.

STACKPOLE

"EVERYTHING IN CARBON BUT DIAMONDS"

▲ For more details circle **NED-444 C** on enclosed inquiry slip ▲

new! Rapistan® APC

ends carton pile-ups

Rapistan APC (adjustable pressure) conveyor reduces damaged cartons and contents by reducing line pressure to the practical mininum. In this photo, the conveyor belt is running, but pressure between cartons is so low that the balloons show almost no compression. The new, safe way to accumulate goods under power in processing, warehousing and shipping operations.

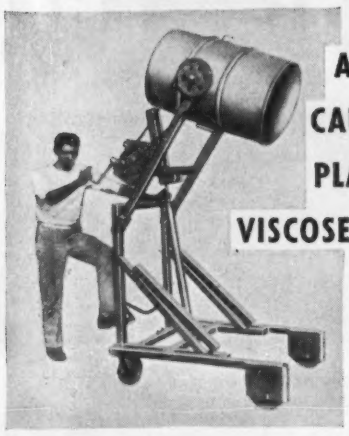
Write for new Bulletin 1200 Illustrating APC Conveyor.

Rapistan® conveying equipment

The RAPIDS-STANDARD CO., Inc.
741 Rapistan Building, Grand Rapids 2, Michigan

▲ For more details circle **NED-445 C** on enclosed inquiry slip ▲

CONTROLLED POURING



OF

ACIDS
CAUSTICS
PLASTICS
VISCOSE MATERIALS

with the Model CP-1 Sterling Hydraulic Drum Lift. Be assured of self-locking and absolute control at any pouring angle.

Lifting capacity 750 lbs. Lifting height 72". For complete details and specification on the CP-1 model and other model Sterling Hydraulic Drum Lifts, write: Dept. NE-3.

STERLING, FLEISCHMAN COMPANY
P. O. BOX 94 BROOMALL, PA.

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Available NOW for the FIRST TIME

•STANDARD

SIZE Corrugated STEEL

BOXES

Item No. B-1900
$74.80
F.O.B. Detroit

IN STOCK • 33" x 48" x 24" deep • 4" underclearance • corrugated all-steel welded construction • square corners • stacking pockets • four-way entrance

•STANDARD Steel PALLETS

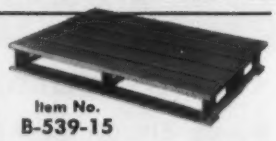
Single and Double Faced

In two sizes • four-way entrance • reinforced all-steel welded construction

Item No. B-413-14

Double faced
TWO SIZES
1. 48" x 40" . . $32.20
2. 48" x 48" . . $39.25

Single faced
TWO SIZES
1. 48" x 40" . . $26.65
2. 48" x 48" . . $30.35



Item No. B-539-15

Item No. B-629-11

Double faced
TWO SIZES
1. 40" x 48" . . $42.10
2. 48" x 48" . . $46.90

All prices f.o.b. Detroit, Mich.,

DESIGNED AND MANUFACTURED BY
Palmer-Shile Co.
Offices in Principal Cities
16015 FULLERTON AVE., DETROIT 27, MICH
Export Division—75 West Street, NEW YORK 6, N. Y.

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PLATFORM TRUCK
has 18 sq ft cargo area

Listed by Underwriters' Laboratories, the Model F-10G industrial platform truck features individual breakers on all electrical circuits, spark arrester muffler, and protective fuel tank cap. Rated 1000-lb capacity, it has a cargo area of 18 sq ft for transporting material, tools, and personnel. Also incorporated are heavy duty air-cooled engine, transaxle drive running in oil, safety seat dead man brake, and clear side deck for hauling long objects. • **Prime-Mover Co.**, Third & Oak Streets, Muscatine, Iowa.

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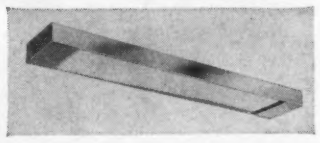
CEILING HEATER
2-in. deep, 2000 and 3000-w units



Only 2 in. deep, the C-209 Zonemaster radiant heater can be surface mounted on noncombustible ceilings or suspended from standard ceilings. It utilizes flat quartz elements for radiant output of 91 per cent. Heater delivers warmth in hard-to-heat and exposed working areas. From 8 to 10 ft away, unit will heat an area of about 125 sq ft. It is 6 in. wide, 36 in. long, and available in 2000 and 3000-w, 240-v ratings. Also available are 208 or 440-v units. • **Ampere Industries**, 60 Boston St., Newark 3, N. J.

▲ For more details circle NED-449 C on enclosed inquiry slip ▲

WASTE RECEPTACLE
has fire extinguishing feature

Smoke from a fire originating in the Flame - Tamer waste receptacle acts as the extinguishing agent. Smoke is diverted across the opening and back toward the fire, preventing oxygen from reaching the flame. Receptacle is open for use at all times. Four models, all without moving parts, are offered: 15 and 30-gal units, waste-basket unit, and hospital unit. Also offered are Flame-Tamer heads for use on 15, 30, and 55-gal drums. • **Rock Royal Corp.**, 120 S. La Salle St., Chicago 3, Ill.

▲ For more details circle NED-450 C on enclosed inquiry slip ▲

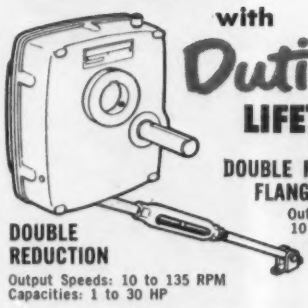
FOOTE BROS.

SHAFT MOUNTED DRIVES

SINGLE REDUCTION
Output Speeds: 90 to 420 RPM
Capacities: ¼ to 40 HP

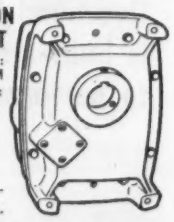
with

Duti-Rated LIFETIME GEARING



DOUBLE REDUCTION
Output Speeds: 10 to 135 RPM
Capacities: 1 to 30 HP

DOUBLE REDUCTION FLANGE MOUNT
Output Speeds: 10 to 135 RPM
Capacities: 1 to 7 HP



High hardness, premium quality Duti-Rated Lifetime Gearing in Foote Bros. Shaft Mounted Drives gives them greater load carrying capacity with long service life. Quick, easy installation on driven shafts with diameters from 15/16" to 3-7/16" saves time, labor, eliminates need for couplings and adjustable motor mount. Built-in backstop to prevent reverse rotation.

Write for Shaft Mounted Drive Catalog.

FOOTE BROS. GEAR AND MACHINE CORPORATION
4569 South Western Boulevard, Chicago 9, Illinois

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How to select WORM GEAR Drives

FREE TO DESIGN ENGINEERS

NEW Bulletin 218

Complete up-to-date information on Cone-Drive double-enveloping worm gear drives. Provides all specification data plus "how to select and order".

CONE-DRIVE GEARS
DIVISION MICHIGAN TOOL COMPANY
7171 E. McNichols Rd. • Detroit 12, Michigan

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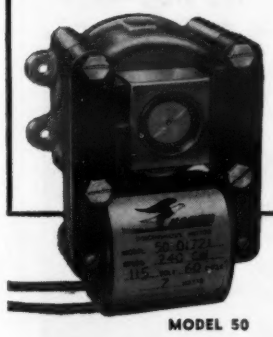
HAGEN synchronous motors . . .



MODEL 50

FOR INDUSTRIAL AND LABORATORY APPLICATIONS

★ DIE CAST HOUSING
★ HIGH TORQUE
★ BRONZE BEARINGS
★ FOR 24, 115, 230, 440 AND 550 V. OPERATION
★ OUTPUT SPEED 1800 TO 1/6th RPM

Available in five models, these motors are designed primarily for industrial applications requiring motor sizes between "clock" and fractional horsepower types. Motor sizes approx. 3¼" x 1½" x 2½".

Write for complete descriptive Bulletin No. 1055. Address Dept. NED-360.

HAGEN MANUFACTURING COMPANY
Baraboo, Wisconsin

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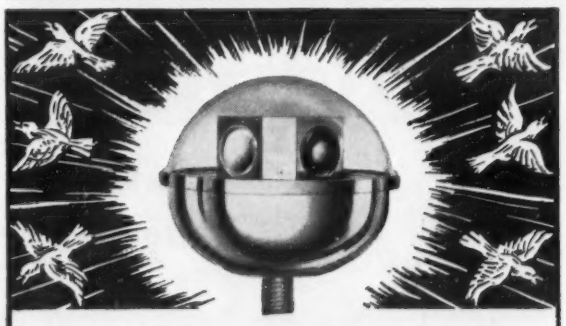

It's for the BIRDS!

STOP COSTLY WAREHOUSE DAMAGE . . .
Flash the MARK VIII Bird Eliminator

Now, bird damage so expensive to packaged goods, sheet steel, machinery, grain and other merchandise stocked inside warehouses can be eliminated! This light covers 360° like an airplane beacon with dual colored beams at the rate of 200 a minute. The roving rays continuously disturb the birds, interrupting their feeding and nesting to the extent that they do not remain. Lifetime vitreous enameled housing can't corrode. Operates on 115-120 V, is easily installed and has a 2000-hour bulb.

Get the Facts—Write TODAY!

TRIPPE MANUFACTURING CO.
133 N. Jefferson, Dept. F-3, Chicago 6, Ill.

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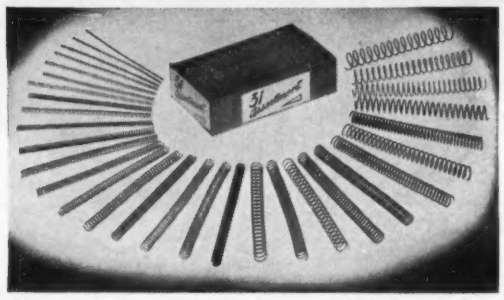
Stock SPRING assortments



Our #31 (compression) Spring Assortment folders are now available and yours for the asking. Our #28 (extension) Spring Assortment folders are also available. Ideal for tool rooms and maintenance work. To overcome the faults of ordinary assortments, which seem to contain "every spring except the one needed", design efforts were not confined to the springs alone; rather, loadings and dimensions were analyzed to assure the user of greater probability in having the correct spring on hand, whatever the application.

We also manufacture to special order.

Send samples or prints for quotation.

Find Your Nearest Paragon Agent In The Yellow Pages

PARAGON SPRING COMPANY
4619 W. Fulton St. • Chicago 44, Ill.

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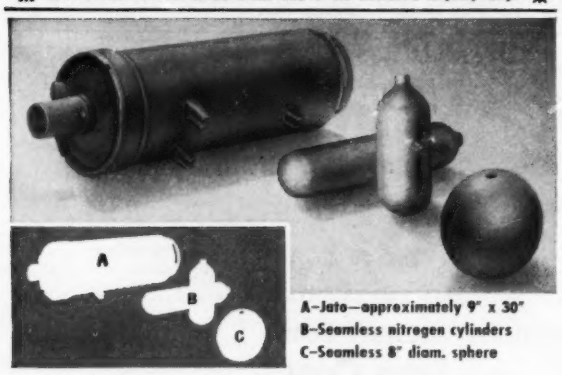

A–Jato—approximately 9" x 30"
B–Seamless nitrogen cylinders
C–Seamless 8" diam. sphere

We give shape to your ideas

If you have an idea for component parts, bring it to our design engineers for a check-out. The chances are Hackney methods can improve appearance and help cut production costs.

Hackney seamless parts are deep drawn cold from circular blanks. Lighter than castings or forgings, Hackney shapes can be "ironed" to close sidewall and diameter tolerances.

These Hackney shapes and shells are spherical, cylindrical, conical, tapered. Sizes: 1 qt. to 100 gal. Diameters: 3" to 32". Wall thickness: for working pressures of 100 to 6000 psi. Made in steel, nickel, magnesium, the new ultra-high-strength stainless steels, hot work tool steels, molybdenum and titanium.

For help with your ideas, write to the address below.

Hackney MILWAUKEE
Pressed Steel Tank Company
Manufacturer of Hackney Products
1450 South 66th Street, Milwaukee 14, Wisconsin
Branch offices in principal cities

CONTAINERS AND PRESSURE VESSELS FOR GASES, LIQUIDS AND SOLIDS

▲ For more details circle NED-456 C on enclosed inquiry slip ▲

You can really cut costs with Standard's

ALL-NEW conveyor belt table

with a wide range of assembly-sorting-processing applications

This new Standard belt table provides more speed, more efficiency on all assembly, sorting or processing operations. Flat top extends all the way across the conveyor frame, and is adjustable sideways for quickly adapting unit to changes in production procedure. Nine standard belt widths — from 6" to 24". Six table widths — from 18" to 48". Heights adjustable from 16" to 79".

Powered by reliable Handidrive unit: constant or variable speed from 5 to 120 fpm. Length of belt table up to 75 feet.

Write Dept. K-3, STANDARD CONVEYOR COMPANY, General Offices, North St. Paul 9, Minnesota.

Sales and service in principal cities

Standard GRAVITY & POWER CONVEYORS

OVER 50 years of conveyor experience

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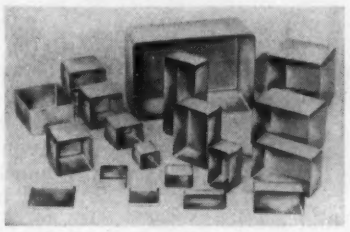
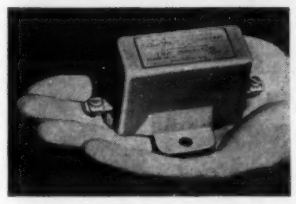
MAGNESIUM BOXES
deep drawn in thousands of sizes



Zero-Method of deep drawing used in making these magnesium boxes leaves the surface wrinkle-free and without need for special preparation for painting. Stocked sizes range from 1½ x 1½ in. with heights from 7/16 to 1¼ in. to 18 15/16 x 18 15/16 in. with heights from 2 to 9 in. All standard boxes can be furnished in any increment of 1/16-in. of height between minimum and maximum. Trimming, welding, secondary metalworking operations, painting, and silk screening can be performed to specifications. • **Zero Mfg. Co.**, 1121 Chestnut St., Burbank, Calif.

▲ For more details circle NED-458 C on enclosed inquiry slip ▲

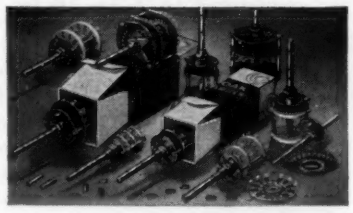
CONTACT ARC INHIBITOR
extends life of electric controls



Service life of control circuit contacts is increased up to tenfold with this arc inhibitor for use on 115 and 235-v dc inductive circuits. It is easily connected in parallel across the coil terminals of magnetic contactors. Particularly suited for use on crane and mill controllers operated by master switches or pendent pushbutton stations, it suppresses arcs and absorbs voltage surges. Contactor drop-out time is reduced up to 70 per cent. Encapsulation protects it against dust and moisture. • **Square D Co.**, EC&M Div., 4500 Lee Rd., Cleveland 28, Ohio.

▲ For more details circle NED-459 C on enclosed inquiry slip ▲

ROTARY SWITCHES
125 popular types are stocked



Factory stock of low-power, rotary switches consists of 125 of the most popular types offered as assembled units, or as subassemblies. All have one fixed and one adjustable stop, plus grooved shafts for break-off to length. Contacts are double-wiping type formed of silver-plated brass, shorting and nonshorting. Insulation is phenolic, steatite, or silicone glass with Kel-F, depending on type. Positions vary from 2 to 23 and number of sections, from 1 to 4. They are offered in quantities from 1 to 249 units which will handle prototype and short-run production needs. • **Oak Mfg. Co.**, 1260 N. Clybourn Ave., Chicago 10, Ill.

▲ For more details circle NED-460 C on enclosed inquiry slip ▲

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TRANSFERABLE HEAD VACUUMS

Speed-up maintenance with Hild transferable head vacuums — ideal for all types of heavy volume or bulk vacuuming, including furnace, flue, and air conditioning duct cleaning. Powerful 1⅓ h.p. motor fits any 10, 15, 30, or 55 gallon drum — transfers from drum to drum in seconds for quick cleaning and water removal. Motors can be converted to blower or "Strap-Bak-Vac" for vacuuming in hard to reach areas.

Model 455
55 Gal. Vacuum
1 h.p

Model 655
55 Gal. Vacuum
2-2/3 h.p.

HILD FLOOR MACHINE COMPANY
1217 Washington Blvd. • Chicago 7, Ill.
Write today for complete information.

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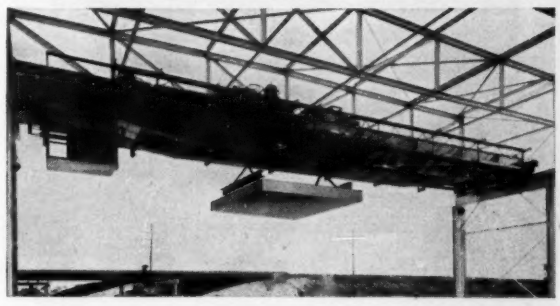
Custom-Engineered
CONCO CRANES
fit* the job, *do* the job . . . *Better

Conco Crane Installation at Underwriters' Laboratories, Chicago



Conco Cranes are engineered to fit your job like a glove. And because custom-building is standard-practice at Conco, special crane features are practically priced. Write us for Bulletin 5000A covering the complete line of Conco cranes, hoists and trolleys.

Material Handling Division
CONCO ENGINEERING WORKS, INC.
57 Grove Street, Mendota, Illinois

CRANES HOISTS CONCO

AFFILIATES
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SAVE ...use plant personnel

to install your own overhead conveyor systems with R-W "Zig-Zag" CONTINUOUS POWERED CONVEYORS

It's easy—much like "building with blocks." Just take so many standard R-W "Zig-Zag" components and put them together into a *custom* conveyor system to meet your exact needs. *It's economical*—for R-W "Zig-Zag" conveyors can be "self-assembled" and installed by your own plant personnel. "Zig-Zag" systems may be easily expanded, modified or relocated at a later date . . . they are economical to purchase, install or maintain. Easily installed in any plant—large or small. Write today . . . request Catalog A-93R.

RICHARDS-WILCOX MFG. CO.
435 W. THIRD STREET • AURORA, ILL. • Branches in Principal Cities.

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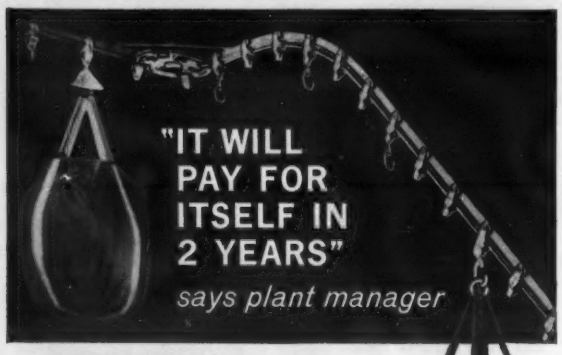

AMERICAN "Cable-Way" OVERHEAD CONVEYOR

During the first 12 months of service this American Cable-Way Conveyor saved ½ of its total cost, according to M. C. Stein, General Manager, Ft. Duquesne Laundry, Eagle Linen Service, Pittsburgh. It was installed during week-ends by plant personnel.

SPECIAL CARRIERS TO FIT YOUR JOB

Bag-type carrier above unloads by pulling a bottom ripcord. It has other possible uses outside the laundry industry. We can design and furnish carriers for all types of products.

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CONVEYOR DIVISION
THE AMERICAN MONORAIL CO.
Fourth & Franklin Streets • Tipp City 7, Ohio

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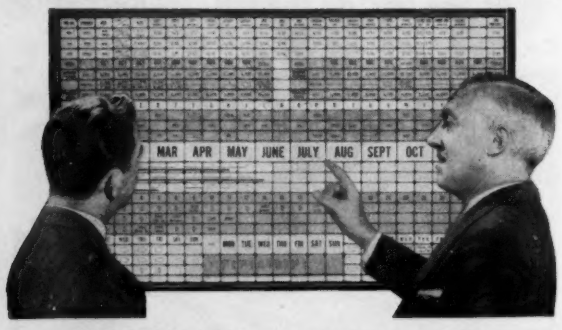
You Get Things Done Better By Seeing What's Happening



BOARDMASTER VISUAL CONTROL

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GRAPHIC SYSTEMS, Yanceyville, North Carolina

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Water treatment— a serious engineering problem

FREE BOOKLET

gives practical answers

Scale deposits and slimes can wreak havoc with air-conditioning and refrigeration systems and with boilers and heating systems. It is a condition all maintenance engineers know and fight. But not everyone can tell you how to *cure* water problems. And not all water treatment chemicals can combat the conditions successfully. "Virginia" can do both. Our chemicals are economical, easy to use—and sold by wholesalers everywhere. A letter, wire, or phone call can bring a "Virginia" man—skilled in every phase of water treatment—to you with the right answers.

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135 Jefferson St., West Norfolk, Va.

☐ Send me a copy of your free booklet, "Water Cooling Problems—How to Correct Them"
☐ Send a "Virginia" field man around to see me

Name_____ Title_____
Company_____
Address_____

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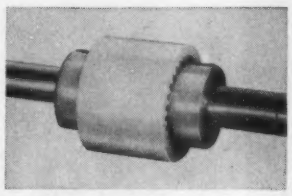
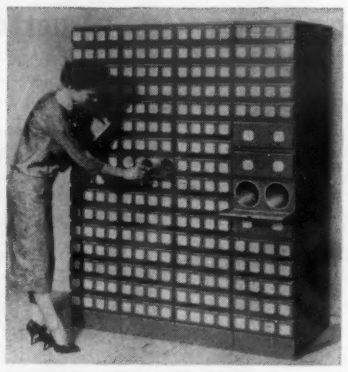
GEAR COUPLINGS for direct drives with small motors



Tested static torque of 1100 lb-in. for Waldron Series J gear couplings is over ten times their recommended operating torque of 100 lb-in. No lubrication is required for the nylon-geared units. Hubs are bored for ⅜, ½, ⅝, and ¾-in. shaft sizes, and are locked in position with two setscrews. Two larger sizes also have 3/16 x 3/32-in. keyways. Overall length is 2 9/32 in. and sleeve has a 1 15/16-in. OD. • **Midland-Ross Corp.**, Waldron-Hartig Div., Box 791, New Brunswick, N. J.

▲ For more details circle NED-468 C on enclosed inquiry slip ▲

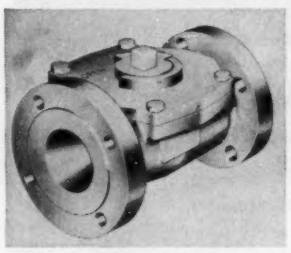
BLUEPRINT FILE holds extra large rolls of plans



LRF Stack Roll File has a furniture steel housing for four Duro-tubes, each with a diameter of 4⅞ in. as compared with the 2⅝-in. diameter tubes in the basic model. Each of the seven lengths from 2 to 5 ft retains the same 12½-in. width of the basic unit, but is 12 in. high. It can be stacked with the smaller size units as shown to form a single, rigid file. Spring-latched steel door has tabs for 2 x 2-in. color-coded identification cards for each tube. • **Plan Hold Corp.**, 5204 Chakemco St., South Gate, Calif.

▲ For more details circle NED-469 C on enclosed inquiry slip ▲

BALL VALVES offered in 1 to 10-in. sizes



Ball of Series 711 Flo-Ball valves rotates on a fixed axis between fixed bearings that require no lubrication. It absorbs high impact and loading without backlash or distortion. Valve may be disassembled and serviced without removing it from the line. Replaceable seats are balanced, self-aligning, and self-adjusting. Operating ranges are from −20 to 400° F and vacuum to 300 psi. Two-way flow and low torque manual operation are features. Sizes from 1 to 10 in. are stocked in semisteel, Type 316 stainless steel, carbon steel, and aluminum. • **Hydromatics, Inc.**, 70 Okner Parkway, Livingston, N. J.

▲ For more details circle NED-470 C on enclosed inquiry slip ▲

Specify the Best in Engraved Tools

The quality of your product deserves equal quality in your marking.
Our complete inventory of alloy steels permits instant selection to meet your requirements.
Style of lettering is tailored to your job.
Quotations furnished promptly upon request.

IF IT'S WORTH MAKING, IT'S WORTH MARKING.

GEO. T. SCHMIDT, INC.
1800 W. Belle Plaine Avenue
Chicago 13, Illinois

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Looking For A Way to cut small parts handling costs?

EEZY-STAK BASKETS STOP EXTRA HANDLING, SPEED PARTS PROCESSING . . . REDUCE COSTS!

Here's how one manufacturer solved costly, time-consuming, small parts handling. Using EEZY-STAK standard wire baskets, a complete series of parts transfer operations was eliminated. Result: Five production processes now performed in one basket—degreasing, drying, pickling, rinsing, cyaniding—plus storage, *without parts removal!*

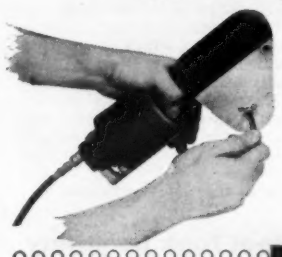
EEZY-STAK baskets have the exclusive, patented *interlock* handle, for easy stacking and compact storage. Open mesh construction Full visibility . . . quick drainage . . . clean! From initial production to final assembly, EEZY-STAK baskets put small parts handling on an economical, low-cost basis. Cut Costs! Investigate the advantages of EEZY-STAK baskets for *your* plant!

Write today for Bulletin No. B-54 to Wire & Iron Products Inc., 1724 Sixteenth Street, Detroit 16, Michigan.

WIPCO

▲ For more details circle NED-472 C on enclosed inquiry slip ▲

now . . . the perfect combination for Low Cost Pre-Insulated Splicing



Buchanan "WIDE-RANGE" Pre-Insulated Splice Caps

Just 1 size for 2 #18, 2 or 3 #16, 2 #14, 1 #12 with 1 #14 — or equivalent combinations.

Tough see-thru Nylon. High insulating value. Easy inspection.

Buchanan Ratchet-Controlled tri-SURE-tools

Just 1 size—Hand or Pneumatic. Fast acting—no adjustments—no wire twisting—load either side — splice caps self-positioning.

Exclusive three-indent rolling action crimp provides peak performance — no puncturing of insulation.

UL & CSA approved—600 V. max. bldg. wire; 1000 V. max. in fixtures — to 105° C. Also UL approved for 1000 V. max. in electric signs

Write for descriptive bulletin J-3

Booth 402
National Electrical Industries Show
New York—March 6-9

BUCHANAN
ELECTRICAL PRODUCTS CORPORATION
HILLSIDE, NEW JERSEY

▲ For more details circle NED-473 C on enclosed inquiry slip ▲

. . . lift it . . . haul it . . . lower it, too!

Trailevator can't really talk, but here's what it *can* do: Lowers to ground level for easy one-man loading—hydraulically lifts its own load in seconds—hauls any load up to one ton! Hitches to car or truck. Lowers and lifts without uncoupling. One-ton and ½-ton capacities. For faster, safer, cheaper hauling . . . *Trailevate!*

SEND FOR BULLETIN T58 *Trailevator Division, Magline Inc., P. O. Box 13, Pinconning, Mich.*

TRAILEVATOR
TAKES THE LIFT OUT OF LOADING

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Photoelectric Control with added "FAIL SAFE" protection

Photoelectric Controls for Every Purpose

Including tension jam-up, sorting, measuring, inspecting, weighing, die-protection, smoke detection, packaging, processing.

Send for catalog describing wide selection of standard equipment including photoelectric controls and light sources for all kinds of conditions.

Increases protection against accidents due to tube or circuit failure.

Automatically assumes open circuit position with current variation normally caused by loss of emission, filament burnout, lamp failure, shorting within a tube or a defective component.

Built-in ammeter provides instant check of photoelectric current which can be adjusted to normal without opening case.

Available with self-contained or remote phototube heads and with light sources adaptable to a wide range of service requirements.

Send for Catalog or tell us what you want to do.

AUTOTRON. INC.
Box 722DK Danville, Ill.
Representatives in principal cities

▲ For more details circle **NED-475 C** on enclosed inquiry slip ▲

AIRMATIC MINIATURE AIR CYLINDERS

compact, space-saving and easily installed

Wherever space is at a premium, Airmatic Miniature Air Cylinders are today's number one selection for aiding in dependable, maintenance-free automation.

For activating electrical contacts in test jigs and fixtures—as miniature air vices—in automatic work for feeding, ejecting, soldering and many other applications. In fact, applications are limited only by the ingenuity of industry's design and production engineers.

Shown here, for example, is Airmatic No. C-1125 mounted on the gravity feed chute of a vibrating parts feeder.

The complete miniature line (with bores of ⅜", ½", ¾", 1", 1⅛", 1½" and 2") are designed with thick brass tube walls.

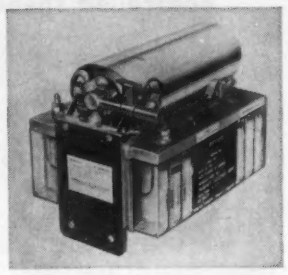
Airmatic products lead the field in quality, delivery, price! Get your copy of "Airmatic Cylinders for Automation", Bulletin 91017, today.

AX-24

AIRMATIC® VALVE INC.
7313 Associate Ave., Cleveland 9, Ohio
Phone: WOodbine 1-5320 ● Western Union: Airmatic Valve, Inc., FAX, Cleveland, Ohio

▲ For more details circle **NED-476 C** on enclosed inquiry slip ▲

SILVER-ZINC BATTERY has 18 cells of 20 amp-hr capacity



Weighing only 20 lb, the Silvercel P-1517 silver-zinc primary battery delivers about 6000 w in 2 sec upon automatic activation. It consists of 18 cells of 20 amp-hr nominal capacity and has an over-all volume of 500 cu in. It can be activated and readied to meet specified voltages in 2 sec, and discharged at rates ranging from 25 amp (at 27 v nominal for 60 min) to 250 amp (at 23 v for 2 min). Suited for emergency standby power, it has a dry shelf life of 3 yr. ● **Yardney Electric Corp.**, 40-50 Leonard St., New York 13, N. Y.

▲ For more details circle **NED-477 C** on enclosed inquiry slip ▲

SOLDER DISPENSER has 20-ft roll of rosin core solder

Pushbutton feeder will apply the right amount of solder for the job from this Kormat wire solder dispenser. Unit is loaded with a 20-ft roll of 60/40 rosin core, 0.050-in. diameter solder wire. It will feed 0.028 to 0.074-in. diameter solder wire. Selection of attachments includes straight or curved probes in several lengths for hard-to-get-at areas. ● **Western Lithograph Co.**, Products for Industry Div., 220 S. Rose St., Los Angeles 54, Calif.

▲ For more details circle **NED-478 C** on enclosed inquiry slip ▲

SHAFT KNURLING FIXTURE for steel, brass, and aluminum

Shaft to be knurled for fitting gears, pulleys, wheels, and other parts is laid on top of a cradle of the Style K G-R-D knurling fixture. The cradle includes two wheel-shaped dies for knurling, performed by one revolution of the geared handle. Ends of 3/16-in. diameter and larger shafts of steel, brass, and aluminum can be knurled to an adjustable depth. ● **M. E. Cunningham Co.**, 1025 Chateau St., Pittsburgh 33, Pa.

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PEEL the STANPAT from its backing.

PLACE the STANPAT into position on the tracing.

PRESS into position . . . will not wrinkle or come off.

are you spending $12.00 for a one cent job?

If you're duplicating drawing details, you're squandering precious hours of costly drafting time. STANPAT, the unique tri-acetate that is pre-printed with *your* standard and repetitive blueprint items, cuts time involved from 3 *hours to 15 seconds!* Figured at current pay rates, this means a $12 job at less than one cent . . . the STANPAT way. Easily transferred to your tracings by an adhesive back or front, STANPAT relieves your engineer of time-consuming and tedious details, freeing him to concentrate on more creative work.

STANPAT is available in two types of adhesive backs:

- **Rubber base for standard drafting and tracing papers**
- **Resin base to prevent leaching for papers that contain oils**

But whatever the application may be, there's a STANPAT product for your specific needs. Stanpat has a guaranteed shelf life of one year from date appearing on tab end. For further information and technical assistance, complete the coupon below and mail.

STANPAT CO. Whitestone 57, N.Y., U.S.A.
Phone: FLushing 9-1693-1611

☐ Please quote on enclosed samples.
☐ Kindly send me STANPAT literature and samples. Dept. 162

Name_____
Title_____
Company_____
Address_____

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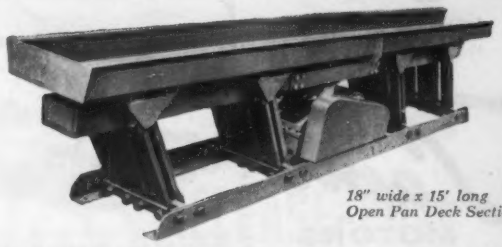
CONVEY...COOL...DRY

with one unit...in one pass!



18" wide x 15' long Open Pan Deck Section

Mechanical vibrating conveyor handles granular, free-flowing material at remarkably low cost per ton; cement clinkers to salt, powders to castings, a few pounds per hour to over 650 tons per hour. Enclosed models handle gaseous, dusty, toxic materials. No degrading of material. Abrasive wear on deck negligible. Virtually silent operation. Lubrication for drive motor only. Broad line of standard units in stock, specials made to order, any width or length. The Jeffrey Manufacturing Company, 952 North Fourth Street, Columbus 16, Ohio. Sales offices and distributors in all major cities.

WRITE FOR CATALOG 908

CONVEYING • PROCESSING • MINING EQUIPMENT...TRANSMISSION MACHINERY ...CONTRACT MANUFACTURING

JEFFREY

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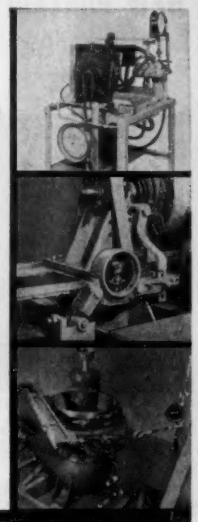
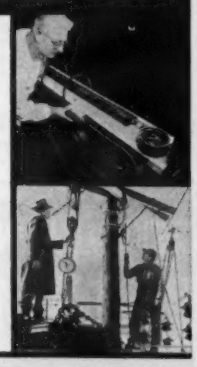
FIRST & FOREMOST



Dillon Dynamometer

MEASURES TENSION, COMPRESSION, TORQUE & WEIGHT

This compact instrument reads directly in pounds. Accurate to within 2% ± full range. Available in 15 different capacities from as low as 0-500 lbs. up to as high as 0-200,000 lbs. 5" or 10" diameter dials optional. Equipped with red maximum pointer, heavy duty shackles and pins, safety glass crystal over dial. Protected against accidental overloading. Exceptionally rugged and fully guaranteed!



GET THIS HELPFUL MANUAL!

See for yourself! The brand new Dillon Dynamometer Design Manual reveals almost **100 different applications** for this versatile instrument. Views made in leading plants under actual operating conditions. Large 8½" x 11" size. Stiff covers. An absolute must for your engineering library. Normal cost over $5.00 per copy to produce—is yours FREE along with latest Dillon Dynamometer brochure and instruments catalog. **Write TODAY!**

W.C. *Dillon* & CO., INC.
14578NE KESWICK ST.
VAN NUYS 1, CALIF.
PHONE: STate 5-3168
D29

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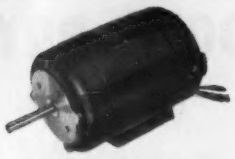


Actuator motor for automatic supermarket scale. Frame 2 7/8 x 1 3/8

designed for dependability

Lamb® MOTORS

Heavy duty three-stage gearmotor for pipe threaders. Frame 4 3/8 x 2 1/4

Thorough study by our engineering department of your product and its operating conditions is the first step in designing a Lamb Electric motor that will assure required dependability.

We then custom manufacture the motor on a volume basis to obtain high quality, uniformity and the most favorable cost.

Full information in descriptive folder sent on request.

THE LAMB ELECTRIC COMPANY
KENT, OHIO
A Division of American Machine and Metals, Inc.
In Canada: Lamb Electric—Division of Sangamo Company Ltd.—Leaside, Ontario

▲ For more details circle NED-483 C on enclosed inquiry slip ▲

NEW PORTABLE HYDROCARBON DETECTOR

detects and measures hydrocarbon traces in gases and atmospheres

The new Perkin-Elmer® Model 213 Hydrocarbon Detector detects and accurately measures—in less than 10 seconds — fractions of parts per million of such organic compounds as hydrocarbons, aldehydes, ketones, amines in gases and atmospheres.

Sensitivity range is adjustable from as low as 0-1 ppm full scale to 10% full scale!

Easy as a suitcase to carry — weighs only 47 lbs.
Easy to use — non-technical personnel master it quickly.

HUNDREDS OF APPLICATIONS EVERYWHERE!

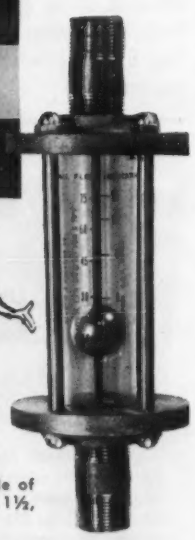
- air-pollution studies — industrial areas, plants, tunnels, garages, highways
- measuring hydrocarbon contamination in LOX, other missile and aviation gases
- monitoring low explosive limits — mines, hospital operating rooms, industrial environments
- checking automotive exhaust gases for engine, fuel, muffler, afterburner performance
- studying and controlling combustion equipment in heating and steam generation
- checking leaks — packaging, gas transmission lines, storage areas, refrigeration equipment
- yours?

For complete details write for the new 8-page brochure.

INSTRUMENT DIVISION
Perkin-Elmer *Corporation*
NORWALK, CONNECTICUT

▲ For more details circle NED-484 C on enclosed inquiry slip ▲

SK FLOW INDICATOR PROVIDES DUAL SCALE FOR WATER OR AIR



Now, you can obtain approximate measurement of *water flow in gpm* and *air flow in cfm* with SK's Fig. 18123 Ball Flow Indicator.

Note the dual scale, for water and air, on the Flow Indicator in the illustration.

This indicator uses a ball to indicate flow in a pipe line. The position of the ball, in relation to the water or air scale graduations gives approximate indication of fluid rate-of-flow.

SK Fig. 18123 Ball Flow Indicators, made of bronze, are carried in stock in 1/4, 1/2, 3/4, 1, 1 1/2, and 2 in. pipe connection sizes.

QUICK DELIVERY FROM STOCK

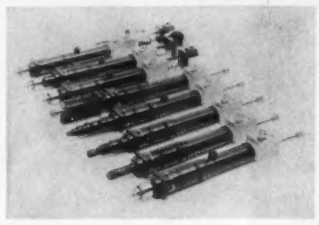
For Immediate Delivery, Standard SK Jet Ejectors, Rotameters, and Flow Indicators are stocked in Cornwells Heights (Phila.), Pa., Houston, Texas, and San Francisco, Calif.

Schutte and Koerting COMPANY
INSTRUMENT DIVISION
2227 STATE ROAD, CORNWELLS HEIGHTS, BUCKS COUNTY, PA.

▲ For more details circle NED-485 C on enclosed inquiry slip ▲

AUTOMATION TOOLS

perform variety of operations with controlled speed and feed, options



Series 21K and 21L automation tools provide rotary and linear motion for use in drilling, tapping, fastening, grinding, reaming, counterboring, and wire brushing. Length of stroke is closely adjusted over a 0 to 2-in. range. Tools are operated singly or in groups in any desired sequence, with controls matched to the desired degree of automation.

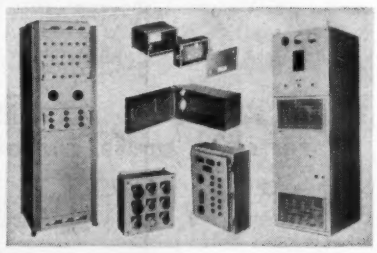
The 21K Series is retracted by a spring return system, and the 21L Series by a double-acting air cylinder. Integrated needle valve controls feed rate of heads without affecting spindle speed. Optional hydraulic heads of 21L Series offers more exact rate of feed, control of stroke up to 1 in. to prevent breakthrough damage, and to speed up the work cycle by cushioning rapid approach.

Air motors used range from 650 to 22,000 rpm. For drilling use, a 1/4-in. key chuck is standard, and a 1/8, 3/16, or 1/4-in. collet assembly is optional. Screwdriver bit and finder are standard on fastening tools, and 3/8-in. square drive adapter and socket are optional. Tapping tools have a No. 10 capacity push-pull tapping head. ● **Buckeye Tools Corp.**, 5003 Springboro, Pike, Dayton 1, Ohio.

▲ For more details circle NED-486 C on enclosed inquiry slip ▲

WIRING ENCLOSURES

custom made with special features with or without electric components



Design, engineering, and fabrication service offered by this company enables it to produce a wide variety of custom wiring enclosures. Electrical control and instrument panels, switchgear and switchgear housings, control cubicles, custom consoles and cabinets, electronic chassis, and instrument mountings and panels can be turned out. Also made to order are junction and cutout boxes, transformer cabinets, JIC wiring troughs and boxes, and NEMA Type 12 and oiltight pushbutton enclosures.

Any of these can be made of stainless steel, brass, aluminum, or other materials, with any type of protective finish. Special knockouts, drillings, studs, screws, conduit hubs, latches, and locking devices can be specified, along with gasketed covers, welded seams, and preassembled electrical components. ● **Keystone** Mfg. Co., 23328 Sherwood Rd., Warren, Mich.

▲ For more details circle NED-487 C on enclosed inquiry slip ▲

Sentry Hardened Tools

Stay Sharper Longer

There's no better "insurance" against costly, premature dulling of your high speed production tools than reliable Sentry hardening. Sentry's unique Diamond Block provides a truly neutral atmosphere that permits heat treating for maximum hardness without danger of scale or decarburization . . . keeps your production tools sharper longer.

Like a free demonstration? Send us your sample high speed steel tool and we'll Sentry harden it for you free of charge.

9-0

Sentry ELECTRIC FURNACES

Request Catalog C-17 Write THE SENTRY CO., FOXBORO, MASS.

▲ For more details circle NED-488 C on enclosed inquiry slip ▲

THIS BOX DO

1. PRODUCTION. Combined with Union Metal positioning stand this box provides automatic work-level positioning of material. Eliminates old-fashioned stoop-stretch-bend methods.

2. UNIT LOADS. Transfer, storage, stacking with fork truck . . . just like ordinary skid boxes.

3. DUMPING. Hinged drop-bottom feature automatically discharges parts or scrap quickly and with perfect control.

In addition, Union Metal offers industry's broadest line of conventional type material handling containers. Write for complete catalog information. Address The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL
Material Handling Equipment

▲ For more details circle NED-489 ▲

Eliminate on 1

FUSETRON dual-element PLUG FUSES are time-delay type fuses as recommended by the code.

BUSS fuses are made to protect - not to b
BUSS makes a complete line of fuses for home, far electronic, electrical, automotive and industri

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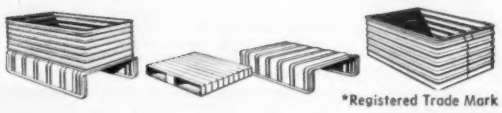
The Authorized S

Spherical, Cylindrical, Ball, and Timken *Tapered Roller Bear*

▲ For more details circle NED-491 ▲

ES 3 JOBS!

THE WORK-O-MATIC*



*Registered Trade Mark

C on enclosed inquiry slip ▲

e Needless Shutdowns 25 volt Circuits—

Save money with

FUSETRON dual-element **FUSES**

"STRONGER" FUSES that won't open when motors start on normally loaded circuits.

Protection against needless interruptions of service without loss of safety.

They help keep lights burning — appliances running and save trouble and expense of useless service calls.

SWITCH FROM ORDINARY FUSES TO FUSETRON FUSES — You will be thankful you did.

BUSSMANN MFG. DIVISION
McGraw-Edison Co., St. Louis 7, Mo.

low, needlessly.
n, commercial,
l use.

FUSETRON BUSS — TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION — McGRAW EDISON

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KF *Distributor always knows his bearings*

He's a specialist on bearing types, numbers, sizes and variations. So, he can help you put the right bearing in the right place. And because he carries SKF's diversified line, he can give you in-stock delivery of almost any bearing. Ask him about these services today.

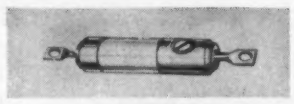
5904

EVERY TYPE—EVERY USE
SKF®
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

*REG. U. S. PAT. OFF.

on enclosed inquiry slip ▲

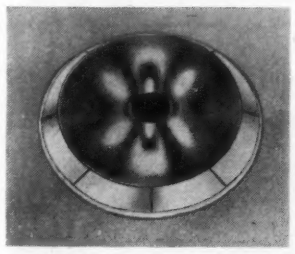
SEALED THERMOSTAT
rated 1 amp at 28 v dc or 115 v ac



Low mass of Model 196A hermetically sealed bimetallic thermostat provides it with an inherently small temperature differential. The capsule type unit may be ordered factory sealed and calibrated to within ±5° F of specifications, with smaller tolerance on special order, or it can be supplied uncalibrated and unsealed. Thermostat is 1 3/16 in. long, 1/4 in. in diameter, and is rated at 1 amp at 28 v dc, or 115 v ac, noninductive. Weight is 0.083 oz. Operating range is −100 to 300° F. Normally closed contacts to open with rise in temperature, or normally open contacts to close with temperature rise, are offered. • **George Ulanet Co.**, Defense Products Dept., 413 Market St., Newark 5, N. J.

▲ For more details circle NED-492 C on enclosed inquiry slip ▲

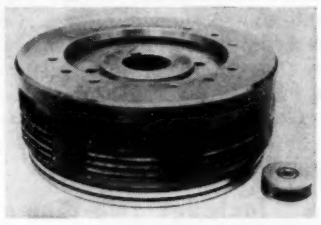
STRAIN COMPASS
shows strain and stress directions



Instantaneous visual indication of principal strain and stress directions at desired points on a test surface is provided by the Strainline photoelastic strain compass. Built-in polarizers allow use and reading in natural or artificial light. Compass indicates principle stress direction of both static and dynamic strains and, in certain cases, may be used for stress ratio determination. Two types have 3/8 and 1-in. effective gage diameters. • **Baldwin-Lima-Hamilton Corp.**, Electronics & Instrumentation Div., 42 Fourth Ave., Waltham 54, Mass.

▲ For more details circle NED-493 C on enclosed inquiry slip ▲

ELECTROMAGNETIC CLUTCHES
one model also usable as brake



Machine tools, rolling mills, air conditioning units, and other types of equipment can be equipped with Bendix Elmag electromagnetic clutches and brakes. Line includes multiple disc and toothed type clutches. Either can operate dry or in oil. The 24-v dc for operation is obtained from a rectifier power supply. Diameters of disc type units range from 4 to 21 in., weights from 4 to 660 lb, and torque capacities from 10 to 12,000 lb-in. Toothed type clutches have diameters from 3 to 9 in., weigh from 1 5/8 to 53 lb, and have 40 to 4000 lb-ft torques. Disc type clutch can also be used as an electromagnetic brake. • **Bendix Aviation Corp.**, Eclipse Machine Div., Elmira, N. Y.

▲ For more details circle NED-494 C on enclosed inquiry slip ▲

There's a *New* DIAL HEAD AGASTAT®

for every time/delay/relay application

Here's what you get with every Agastat time/delay/relay

- Easy adjustment
- Repeatable accuracy
- Instantaneous recycling
- Unaffected by voltage variations
- Low power consumption

GET THE WHOLE STORY—write today for Bulletin No. SR-10 and find out how Agastat can help you to solve your time delay problems. Write to Dept. A35-35.

AGA DIVISION — ELASTIC STOP NUT CORPORATION OF AMERICA
1027 Newark Avenue, Elizabeth, N. J.
Gasaccumulator Co., (Canada) Ltd., 12 Gower Street, Toronto 16, Ontario

▲ For more details circle NED-495 C on enclosed inquiry slip ▲

how to "PREVENT" coatings from clinging to exposed surfaces

apply
RELEASE-COTE
THE MIRACLE RELEASING AGENT

Just a thin film of RELEASE-COTE on any exposed surface will prevent build-up from coating splash. Cuts cleaning down-time to absolute minimum.

TRYOUT OFFER! $1.00
A generous supply of RELEASE-COTE for you to test. (Note how operators like RELEASE-COTE'S gentleness).

Distributed by
POTDEVIN MACHINE CO. 273 North Street Teterboro, N. J.
World's largest producer of coating machines.

▲ For more details circle NED-496 C on enclosed inquiry slip ▲

Helicoid Gages give *Sustained Accuracy,* even on the toughest jobs

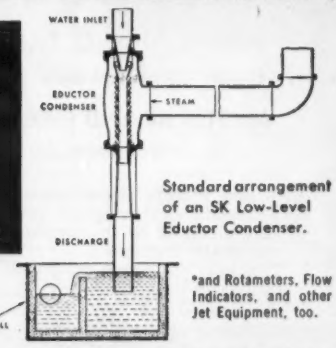
★ Exclusive Helicoid movement has no gears, no teeth. Shock-proof construction protects accuracy through millions of cycles.
★ Bourdon tubes available in four materials—bronze, steel, stainless steel, and K Monel—won't stretch, crack, or leak.
★ Six cases, including new solid-front safety case, meet every mounting requirement.
★ External pointer adjustment can't be jarred out of position.
★ A complete selection of gages and accessories for hydraulic, chemical, and other service.

Write for Catalog DH-65.

HELICOID GAGES ACCO
Helicoid Gage Division
American Chain & Cable Company, Inc.
929-J Connecticut Avenue • Bridgeport 2, Conn.

▲ For more details circle NED-497 C on enclosed inquiry slip ▲

GET QUICK DELIVERY ON
LOW-LEVEL CONDENSERS*



Standard arrangement of an SK Low-Level Eductor Condenser.

*and Rotameters, Flow Indicators, and other Jet Equipment, too.

As shown, SK Low-Level Eductor Condensers require no barometric leg. Their normal operating pressure is about 26" Hg. However, they can produce vacua of 29" Hg or higher, depending on water temperature, for industrial process operations or for small engines or turbines. Eight sizes offer wide range of capacities.

You get quick delivery on SK Condensers from stock in Cornwells Heights, Pa., in Houston, Texas or in San Francisco, Calif. For full details request Bulletin 5AB or contact our main office by phone or TWX.

Schutte and Koerting COMPANY
2227 STATE ROAD, CORNWELLS HEIGHTS, BUCKS COUNTY, PA.
Phone: MErcury 9-0900 TWX: Cornwells, Pa., 69-"U"
JET APPARATUS • ROTAMETERS • GEAR PUMPS • VALVES • HEAT EXCHANGERS

▲ For more details circle NED-498 C on enclosed inquiry slip ▲

Muscle-Saving LIGHTNESS that gets More Work Done Faster, Easier, Safer...

mpm Lightweight MAGNESIUM DOCKBOARDS

867 models and sizes to match YOUR needs

mpm Dockboards in hundreds of standard dimensions, plus unlimited varieties adaptable for quick job-engineered special uses, makes mpm your first choice for job-fitting efficiency. Write, or phone for an mpm Dockboard expert, and estimates that bring your handling costs down to rock bottom.

mpm MAGNESIUM PRODUCTS OF MILWAUKEE, INC.
740 N. Plankinton Ave.
Milwaukee 3, Wisconsin

Write for Bulletin TR-656 covering technical details on mpm Standard and Job-Engineered Dockboards.

▲ For more details circle NED-499 C on enclosed inquiry slip ▲

HEAVY PERFORATED PLATE

Mild Hot Rolled Steel

ROUND

SQUARE

SLOTTED

Thicknesses: 3/16" 1/4" 5/16" 3/8"

National Perforating Corporation
42 Parker Street, Clinton, Massachusetts

▲ For more details circle NED-500 C on enclosed inquiry slip ▲

* If It's New, It's No Doubt Mystik

+550°F 0°Fahrenheit 110°F

NEW! 7000-G TAPE for Extreme Temperature Range —110° to +550° F.

MYSTIK BRAND FIBERGLAS TAPE with Silicone Adhesives

A new concept in pressure-sensitive tapes—an essentially inorganic pressure-sensitive tape accepted by the aircraft, electrical and electronics industry.

7000-G has a tightly woven, high-tensile Fiberglas® backing with a pressure-sensitive silicone adhesive. Superior thermal and electrical properties make it ideal for many applications previously not possible for pressure-sensitive tape.

(Conforms to Government Specification MIL-1-19166. Approved as Class H Insulation.)

Write for full information on Mystik Brand 7000-G and the complete Mystik line of high and low temperature tapes using silicones with Mylar®, aluminum, copper, and Teflon.

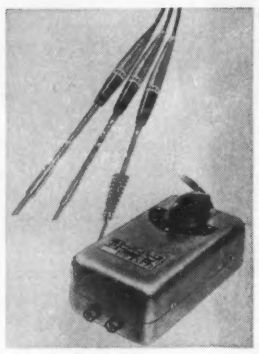
Mystik Adhesive Products, Inc.
2635 North Kildare Ave.
Chicago 39, Illinois

MYSTIK BRAND TAPES SELF-STIK

PACKAGING • PROTECTIVE COVERING • PRINTABLE • ELECTRICAL TAPES

▲ For more details circle NED-501 C on enclosed inquiry slip ▲

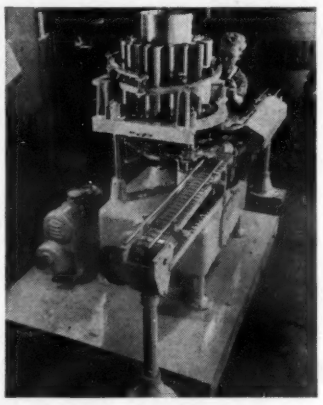
MINIATURE SOLDERING IRON for electronic and precision work



Removable interchangeable tips, fast temperature control, and compact easy-to-handle size are features of Ersa-Minitype soldering iron which adapt it for use on subminiature assemblies, printed circuit boards, transistors and diodes, and other precision work. Soldering irons with 10, 20, and 30-w ratings are available. Control transformers with 10 and 30-w ratings have primary voltage regulators for 110, 125, 220, and 240 v ac and secondary voltages variable in a range of 5 to 7 v, making possible selection of a temperature range between 300 and 500° C. Solder bits and heating elements are replaceable. • **Caig Laboratories,** 46 Stanwood Rd., New Hyde Park, L. I., N. Y.

▲ For more details circle NED-502 C on enclosed inquiry slip ▲

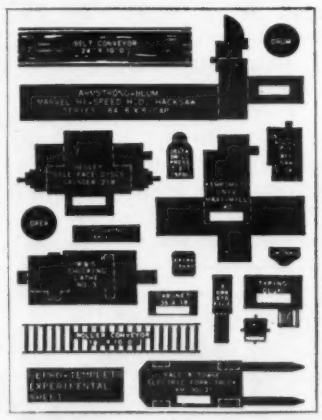
CONTAINER FILLER fills 300 containers per minute



Products ranging from semiviscous to semisolid are metered into containers accurately within 0.1 fl oz by this 10-station Model RP-210 rotary piston filler. Speed ranges to 300 per minute depending on container size and product. Continuous 4-ft infeed and 4-ft discharge chutes or conveyors adapt machine for glass, paper, or prepack containers in height range of 200 to 700. Height of fill is adjustable, and three cylinders offer fills of 1 to 5, 4 to 16, and 8 to 38 oz per stroke. Machine is built to sanitary specifications and is easy to operate and maintain. • **Pfaudler Co.,** 1107 West Ave., Rochester, N. Y.

▲ For more details circle NED-503 C on enclosed inquiry slip ▲

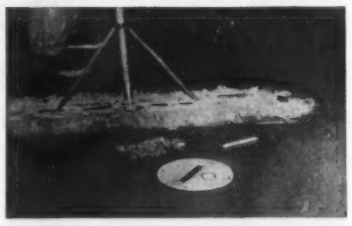
PLANT LAYOUT KIT includes two-dimensional templets



Experimental plant layouts are readily prepared with this Templet Kit. It consists of a sheet of 1/4-in. scale two-dimensional templets in an assortment of machine tools, and materials handling and office equipment, plus a 1/4-in. scale film grid sheet. The adhesive-backed film templets are placed as planned on grid sheet, and layout can be processed through blueprint or reproduction machine for layout prints. Kit is free. • **Repro-Templets Inc.,** 614 Allegheny R Blvd., Oakmont, Pa.

▲ For more details circle NED-504 C on enclosed inquiry slip ▲

MOP VACUUM SYSTEM removes dust, lint from dry mops



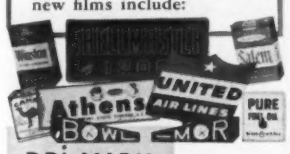
Dust and lint gathered on dry mops, dusters, and dust cloths during use are sucked from them by the Sani-Mop Vac System. A plug in the flush-mounted plate is removed prior to use. Dirt is drawn through this opening to the vacuum disposal facility. Components include slotted plate flush-mounted in the floor or on top of a cabinet, multistage centrifugal exhauster, Smooth Flow tubing, and a wet or dry separator. An inlet valve also permits attachment of hose for vacuum cleaning. • **U. S. Hoffman Machinery Corp.,** Air Appliance Div., Dept. RN, 103 Fourth Ave., New York 3, N. Y.

▲ For more details circle NED-505 C on enclosed inquiry slip ▲

ANNOUNCING... THE LATEST ADDITION TO OUR FAMILY OF QUALITY PRODUCTS—

MEYERCORD DRI-MARK FILMS

DRI-MARK . . . is Meyercord's newly perfected line of PRESSURE SENSITIVE signs and trade marks produced as durable Truck Signs, Window Signs, Nameplates and Product Markings. These startling new films include:



These high tensile strength PRESSURE SENSITIVE films and laminates give the greatest possible latitude and flexibility to the Meyercord line of products, adaptable to all of your sign needs . . . processed with Meyercord's own exclusive PRESSURE SENSITIVE adhesive and Meyercord's in-plant Research, Art, Production and Service facilities. *Remember, when it's DRI-MARK it's Meyercord!*

DRI-MARK DECAL
DRI-MARK VINYL
DRI-MARK MIRRO-CAL
DRI-MARK MIRRO-CAL 2000
DRI-MARK CLEAR MYLAR
DRI-MARK OUTDOOR PAPER

with MEYERCORD COLORGARD 70

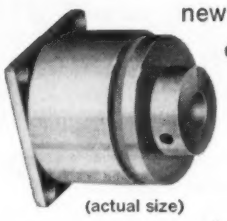
Now . . . all Meyercord DRI-MARK films are protected by COLORGARD 70, Meyercord's exclusive laboratory-developed and perfected clear top coat—the toughest, most durable coat yet produced for the Decal and transferable film industry. Thoroughly tested! Two years in actual use!

Whatever your sign needs, you owe it to yourself to investigate Meyercord's complete line of products. Our factory trained representatives will be glad to assist you in the proper selection of markings for any particular requirement. *Write today.*

the MEYERCORD co.
Dept. C-316, 5323 West Lake Street, Chicago 44, Illinois

▲ For more details circle NED-506 C on enclosed inquiry slip ▲

Warner announces . . . new miniature electric brakes and clutches for low-torque instrument drives



(actual size)

Need automatic control of torque loads up to 1.5 lb-in. for compact instrument drives, aircraft/missiles components, and similar applications? Two-piece floating armature avoids complex alignments, speeds assembly. Ask your Warner representative for a desk-top demonstration of the speed, adjustability, and control-*ability* of this compact electric brake and clutch.

WARNER ELECTRIC BRAKE & CLUTCH CO.
WARNER Beloit, Wisconsin

▲ For more details circle NED-507 C on enclosed inquiry slip ▲

NEW PORTABLE GANTRY
Has Both Height & Width Adjustment

With 6 ft. of height adjustment, and a wheel tread adjustable to the narrowest aisles, the result is a new concept in portable gantries. Also featured is an I-Beam that hangs freely from hinged supports, thus eliminating internal twist and strain, regardless of how uneven the floor may be. The trolley is free to travel the full length of the beam.

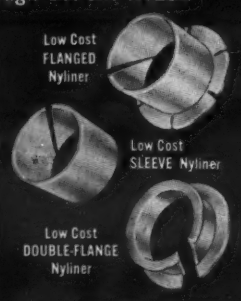
The legs fold against the I-Beam, resulting in a compact unit for hauling or storage. Models are available with steel or aluminum alloy I-Beams in heights up to 17 ft. and 15 ft. spans. Maximum capacity is 3 tons. For complete literature, write

B. E. WALLACE PRODUCTS CORP.
EXTON 19, PA.

▲ For more details circle NED-508 C on enclosed inquiry slip ▲

THOMSON "Snap-In" NYLINERS
—BEARINGS of smooth, tough DuPont NYLON

COST less to BUY
...less to INSTALL
ELIMINATE LUBRICATION!



Additional Benefits:
- CLOSE FIT
- LONGER LIFE
- EASILY INSTALLED
- LESS SERVICING
- SELF-RETAINING
- RESIST CORROSION
- LOW FRICTION
- RESIST POUNDOUT
- NO FRICTION OXIDATION
- DAMP VIBRATION
- OPERATE IN LIQUIDS
- NON-CONTAMINATING
- INSTANTLY REPLACEABLE
- RESIST ABRASION
- MINIMUM SPACE
- SILENT OPERATION
- LIGHTEST WEIGHT
- REDUCED WEAR

NYLINER Bearings are a highly engineered thin liner of DuPont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use. The compensation gap principle assures maintenance of diametral tolerances for precision applications.

Seven Standard Types available from stock. Write for literature and name of your local representative who stocks NYLINER Bearings for immediate shipment.

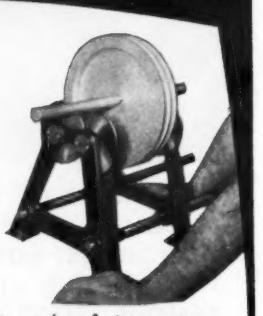
THOMSON INDUSTRIES, Inc.
DEPT. 9, MANHASSET, NEW YORK

Also—Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions and 60 CASE . . . Hardened & Ground Steel Shafting

For more details circle NED-509 C on enclosed inquiry slip

Balance Rotating Parts
FASTER...EASIER

USE Anderson BALANCING WAYS

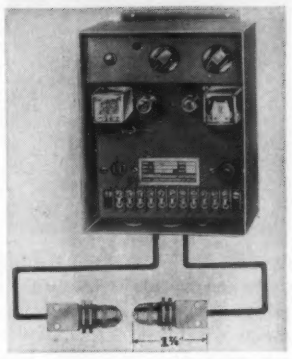


Static-balance rotating parts easier, faster, more accurately with *supersensitive* Anderson Balancing Ways. No setup, no leveling, no centering. Chilled iron discs, ground and balanced to extreme accuracy, rotate with minimum friction on special precision bearings. Glass-hard spindles and bearings prevent wear or ball-bearing indentations when balancing heavy work. Superior accuracy lasts throughout long life. Proved and preferred over 40 years.

Write for Bulletin No. 3-40
ANDERSON BROS. MFG. CO.
Rockford, Ill.

For more details circle NED-510 C on enclosed inquiry slip

PHOTOELECTRIC CONTROLS are miniaturized and transistorized for counting, inspection, control

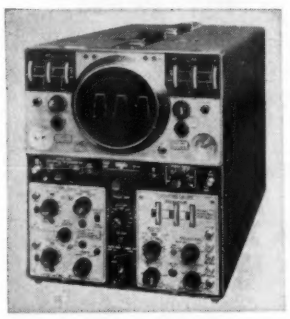


Plug-in connection, easy mounting, and transistorized amplifiers are features of Robot-Eye miniaturized photoelectric controls which adapt them for production counting, sorting, inspection, traffic control, operator safeguards, liquid and bin level control, packaging, and hundreds of other applications. The three elements are the light source, photocell, and amplifier. These can be interconnected as desired by plug-in terminals and receptacles, making possible complete versatility to needs of system or operation.

Units can be flush, panel, swivel base, and ball joint mounted. Amplifiers are also made in tube types, and flexibility is extended by provision for plug-in connection of time delays and count registers. Operating range is up to 20 ft standard and 100 ft special. Speed is as high as 1000 operations per minute. Prices start at $56.50. • **Standard Instrument Corp.**, 657 Broadway, New York 12, N. Y.

For more details circle NED-512 C on enclosed inquiry slip

GENERAL-PURPOSE OSCILLOSCOPE with direct digital reading system can be read by untrained personnel



Model 425 high-frequency, general purpose oscilloscope has a direct digital system which can be read directly in numbers by factory or production line workers. Direct numerical portrayal of time and amplitude is accomplished through manipulation of two measuring dots on the face of the scope which are moved by joy stick controls and thumb wheels for aligning with the waveform presentation. Repeatable readings are readily obtained, and accuracy is within 2 per cent.

Modular construction, interchangeable plug-in amplifiers, and a new cathode-ray tube are among the innovations. Unit is useful over a range from direct-current to 60 megacycles. Readout system also increases instrument's use with computers, recorders, printers, punch-card machines, and other data gathering sources. The 125-lb, forced-air ventilated unit measures 27 x 16½ x 13½ in. and requires 1000 w at 60 cps, 115 v. • **Allen B. Du Mont Laboratories, Inc.**, 750 Bloomfield Ave., Clifton, N. J.

For more details circle NED-513 C on enclosed inquiry slip

small valves...big capacity...
fast cycling...low price

Humphrey "Quick-Dump" CONTROL VALVES

These Humphrey Valves are brand new in design and performance. Use them for valving air, oil, water, other liquids, gases, up to 125 psi. Also vacuum. Their big capacity, fast opening, quick exhausting, and smooth, positive action are like nothing you've ever seen before. Cycling speeds up to 30,000 per hour! Wide range of ⅛", ¼" and ½" models for manual, electric, piloted operation. 2-way, 3-way, 4-way types. Three methods of mounting—in line, manifold mounting, or new cartridge type for inserting internally in manifold. Readily engineered for OEM applications.

Write today for bulletin

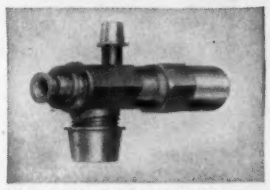
Humphrey PRODUCTS DIVISION
DIVISION GENERAL GAS LIGHT CO.
Kalamazoo, Michigan

For more details circle NED-514 C on enclosed inquiry slip

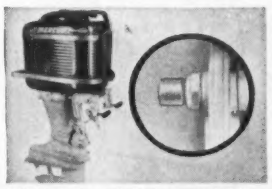
which CaPlug will protect your product best?

write for this free sample kit and see!

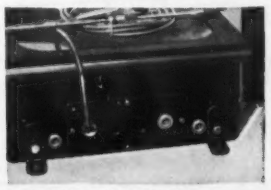
WANT TO SEAL OPENINGS IN A JIFFY?
Tapered (non-threaded) CaPlugs can be used as caps or plugs, inside and outside of threaded or plain fixtures. Just push them on . . . or push them in. Costing less to buy, these versatile closures cost less to apply. Time studies show that tapered CaPlugs save up to 500% in labor costs.



WANT TO KEEP FITTINGS UNDER WRAPS?
See how CaPlugs seal out dust and protect fittings of this refrigeration valve during shipment. Says Automatic Machine Products Sales Co., "CaPlugs are easy to install and afford the protection we desire." With ten standard styles stocked in over 500 sizes, CaPlugs are promptly available for nearly every closure need.



WANT TO PROTECT DELICATE THREADS?
Kiekhaefer Corp. guards the threads on the "Ride Guide" steering controls of its Mercury outboard motor with threaded style CaPlugs which the customer can reuse when storing motor. Made of tough, flexible Polyethylene, CaPlugs are kind to threads and polished surfaces — will not collapse, chip, break or shred.



WANT TO ADD SALES APPEAL?
Colorful CaPlugs spruce up your product and reflect the care you have taken to keep delicate systems free of dirt and moisture. This Bristol air control instrument is a good example. Says The Bristol Company, "They are sturdy enough so that they are not accidentally dislodged, but are still easily removable."

MAIL THIS COUPON FOR FREE CAPLUG SAMPLE KIT WITH DESCRIPTIVE LITERATURE AND PRICES

CAPLUGS DIVISION,
PROTECTIVE CLOSURES CO., INC.
2209 Elmwood Ave., Buffalo 23, N. Y.

RUSH a free CaPlug sample kit, literature and prices to us, without obligation.

NAME TITLE
FIRM
ADDRESS
CITY ZONE STATE

For more details circle NED-515 C on enclosed inquiry slip

NEW

SKIL ½" Right Angle Drill, and Low-Cost, Self-Feeding Bits Drill Large Holes Fast—in Tight Places

Here is a combination designed to answer plumbers', electricians', and maintenance men's toughest on-the-job drilling problems. With the new Model 268 right angle ½" drill you can work in the tightest corners—and with the 5 new self-feeding bits you can drill large holes from 1¼" to 2 9/16" without bearing down on the tool!

This new Skil Model 268 handles *any* drilling job. By merely reversing the right angle drive unit, you can either have a lower speed for boring large holes, or higher speed for fast drilling of smaller holes. For straight-line drilling just remove the right angle drive.

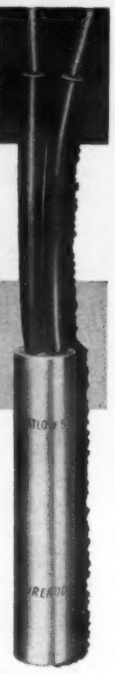
And Skil's remarkable new self-feeding bits save you money two ways. They are lower in initial cost, and—unlike ordinary bits—their blades, perimeter cutters and feed screws are *replaceable*—at nominal cost.

The Model 268 comes complete with carrying case and one 2 9/16" self-feeding bit. Ask for a demonstration today by your local SKIL distributor.

SKIL
Famous Skil and Skilsaw Products, made only by SKIL Corporation, 5033 Elston Avenue, Chicago 30, Illinois

For more details circle NED-511 C on enclosed inquiry slip

FIREROD
CARTRIDGE HEATER BY WATLOW



HOTTEST!
5 times more heat than any standard cartridge heating unit.

LONGEST LASTING!
5 to 10 times the operating life of ordinary units.

GREATEST DESIGN FLEXIBILITY!
1/5 the size for the same heat of standard cartridges.

Write for illustrated literature.

WATLOW
ELECTRIC MANUFACTURING CO.
1374 Ferguson Avenue
St. Louis 14, Mo.

For more details circle NED-516 C on enclosed inquiry slip

For Just PENNIES A DAY

This **TRICO-MIST** Will Increase Production Up to 500%

For drilling, tapping, milling, sawing, grinding, etc. Remove heat from cutting edges of tools and work. Feeds can be increased considerably, finer finishes and accuracy are obtained. TRICO-MIST absorbs heat, thereby quenching it faster than flood coolants which only transfer it. Chips slide freely up the tool face and are blown away automatically.

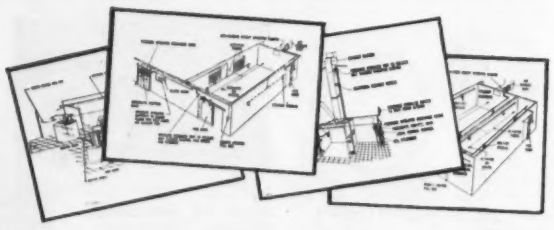
Simple needle valve controls size and volume of mist spray. Attaches to shop air line. Available with one and five gallon containers — single or multiple outlets—single or dual valve control.

GET FACTS

SEND FOR BUL. 37

TRICO FUSE MFG. CO. MILWAUKEE 12, WIS.

For more details circle NED-517 C on enclosed inquiry slip

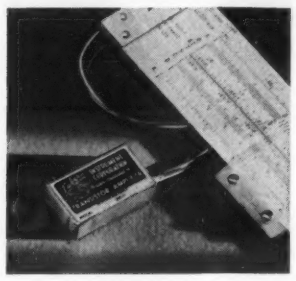


Free! tailor-made fire protection plans from Kidde! Whatever the hazard—dip tanks, spray booths, electrical equipment, record vaults—Kidde has a plan that will illustrate the proper protection. These plans are yours free for the asking—just fill in the coupon below. If you wish, you may also request an on-the-spot analysis by a Kidde fire protection expert. No obligation, of course. Take advantage of Kidde's 35 years' experience. Mail the coupon today.

To: Walter Kidde & Company, Inc., 324 Main Street, Belleville 9, N. J.
Please send me free fire protection plans for the hazards checked:
☐ Spray booth ☐ Coaters ☐ Test stands
☐ Dip tank ☐ Record vaults ☐ Electrical equipment
(Mention any other special hazard)
☐ *Please have representative call*
NAME
COMPANY
ADDRESS
CITY STATE

For more details circle NED-518 C on enclosed inquiry slip

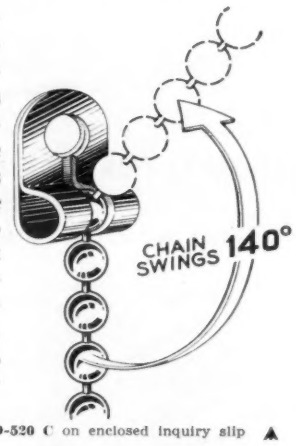
TRANSISTOR AMPLIFIER
for servo, audio, and pulse uses



This Model 207G subminiature transistor amplifier is a moderate temperature, medium gain voltage amplifier for severe vibration conditions. Requiring 1 ma at 28 v, it has an open loop gain of over 40 db and closed loop gain of 10 to 26 db. Current limiting devices make runaway impossible, and it cannot be damaged by short circuited output or by reversing the power supply. Enclosed in a stainless steel case, it meets a vibration specification of 400 g's at 2 kc without microphonic noises. Price is $89. • **Taber Instrument Corp.**, Section 16, 111 Goundry St., North Tonawanda, N. Y.

For more details circle NED-519 C on enclosed inquiry slip

BEADED CHAIN COUPLING
joins chain to parts and covers

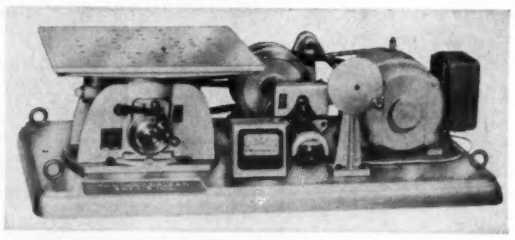


Suited for variety of attaching and retaining applications, this D-Coupling for beaded chain is easy to assemble. It accepts any length or size of beaded chain and is available in several hole sizes for attaching it to such objects as outlet plugs, machine part covers and caps, and stoppers. Chain swings free. • **Auto-Swage Products, Inc.**, 40 Canal St., Shelton, Conn.

For more details circle NED-520 C on enclosed inquiry slip

VIBRATION FATIGUE TESTER
table capacity is 150 lb at 10 g

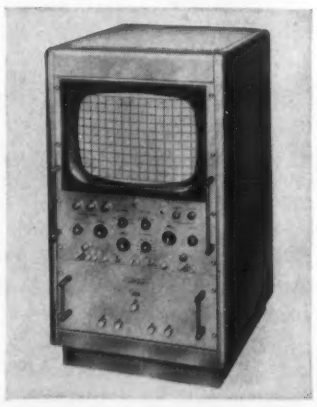
Vibration is produced by simple harmonic motion in two improved vibration fatigue testing machines. Vertical table movement is controlled by a piston operated



mechanism. Table load capacity is 150 lb at 10 g acceleration. For higher accelerations, the load must be reduced. Two models use an automatic range selector to increase frequency uniformly from 10 to 60 cps or from 5 to 100 cps. Any range of frequencies within the total range may be used, the frequency can be held at any desired point, or frequencies can be changed manually. Table area is 18 x 21 in. • **All American Tool & Mfg. Co.**, 8044 Lawndale Ave., Skokie, Ill.

For more details circle NED-521 C on enclosed inquiry slip

LARGE-SCREEN OSCILLOSCOPE
has high resolution and accuracy



Use of a 17-in. cathode ray tube in this large-screen oscilloscope assures high degree of resolution and accuracy, and minimizes eye fatigue. It incorporates 10-mv sensitivity, stabilized input amplifiers for drift-free operation, calibrated controls for over-all 2 per cent accuracy, 1 per cent linearity, stabilized voltage regulators, dc to 500 kc frequency response, and resolution of 40 lines per inch deflection. The wrap-around steel cabinet is finished in two-tone baked enamel. • **EPR Special Products Corp.**, 675 Barbey St., Brooklyn 7, N. Y.

For more details circle NED-522 C on enclosed inquiry slip

FOR PERMANENT THREADS
in soft metals... hard metals ...plastic... wood
use
HELI-COIL®
Screw-Thread Inserts

Choose from this full line of *Heli-Coil* Wire Thread Inserts . . . the one-piece, 18-8 stainless steel threaded connections that let you put permanent threads in any material and in standard proportion bosses without redesign.

HELI-COIL Screw-LOCK Inserts offer an exclusive resilient *internal locking* coil that eliminates the weight, space and cost of lock nuts, other external locking devices . . . permanently protect threads against wear, stripping, corrosion, galling, seizing, vibration and shock . . . meet military and NAS specifications.

HELI-COIL Screw-THREAD Inserts give the same thread protection with no locking feature. Both are available in all sizes and lengths in U.N.C. and U.N.F. series. Pipe thread and spark plug sizes, too.

HELI-COIL Shop Packs contain *Heli-Coil* Screw-THREAD Inserts, special tap and inserting tool . . . for fast, easy, on-the-spot repair of worn and stripped threads, retaining original bolt size.

There is a *complete* line of *Heli-Coil* products for every thread need: inserts, taps, tools and gages. Let us help you with your design and application problems. Write today for complete information. 1924

HELI-COIL CORPORATION
3403 Shelter Rock Lane, Danbury, Connecticut
In Canada: Armstrong Beverley Engineering Ltd., 6975 Jeanne Mance St., Montreal 15, Que.

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DRILL HOLES UP TO 1½" DIA. IN MASONRY—SAVE UP TO 70% WITH NEWEST LOW-COST TRUCO® HAND KIT AND FAMOUS TRUCO DIAMOND BITS

Handy little kit weighs only 17½ lbs. and easily saves its cost on your first job. Drills concrete (but not rods), brick, marble, terrazzo, all tiles like crazy; wonderful for anchor holes. Every maintenance crew needs one. Accessories available.

Write for Distributor's name and literature

TRUCO MASONRY DRILLING DIVISION
TRUCO WHEEL TRUEING TOOL COMPANY
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575 Langlois, Windsor, Ont.

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HALF-A-CENTURY OF INDUSTRIAL DIAMONDS

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COROLINE

A CORROSION-PROOF THERMOSETTING COMPOUND FOR LINING

Chemical Storage Tanks • Processing Tanks
Pickling & Plating Tanks • Pits & Foundations

This new lining material resists the effects of alkalies, acids and solvents. COROLINE can be easily applied with trowel or brush in thicknesses ranging from 1/16" to 3/16". COROLINE can be applied by the customer or by Ceilcote personnel in the field or factory.

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THE CEILCOTE CO., Inc.
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3012-CC

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NEWS FLASH:

PARKER proves one man can sweep 50,000 sq. ft. per hour

Turbo-Sweep "40"

Self-propelled, controls at hand level. Collects all debris. Dust bag and trash hopper emptied in seconds. Free catalog.

Dept. NE

Parker SWEEPER COMPANY BOX 720, SPRINGFIELD, OHIO

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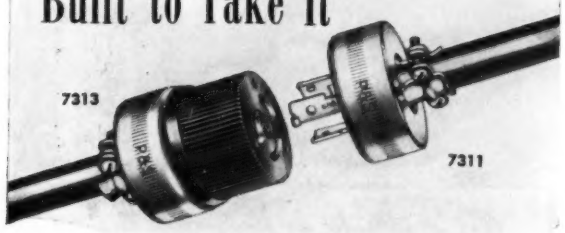
P&S TURNLOK

Built to Take It



P&S TURNLOK wiring devices are designed to give trouble-free service no matter how tough the going gets. TURNLOK devices are available in 10 and 20 Amperes, 2-, 3-, and 4-wire types: receptacles, connectors and caps.

PS PERFORMANCE SPECIFIED

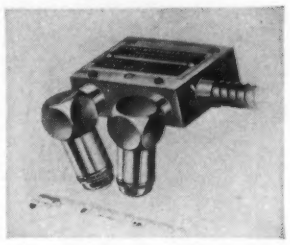
For information about P&S TURNLOK Line, write Dept. NED-36.

P&S PASS & SEYMOUR, INC. SYRACUSE 9, NEW YORK

60 E. 42nd St., New York 17, N.Y. 1440 N. Pulaski Rd., Chicago 51, Ill. In Canada: Renfrew Electric Co., Ltd., Toronto, Ontario

▲ For more details circle NED-527 C on enclosed inquiry slip ▲

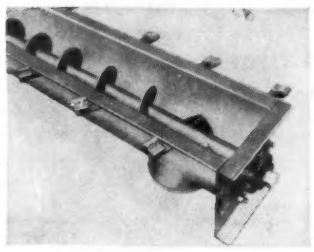
ELECTRIC EYE RELAY
is self-contained reflective unit



Model RFU-7 miniaturized photoelectric amplifier relay is compact, self-contained, and adjustable for use in counting, inspection, and control applications. Positions of the light unit and photo pick-up are adjustable as to the angle and reflection of spot distance. Both light and photo sensitivities can be adjusted to operate at any threshold of reflected light. Size of 1¾ x 2½ x 2¾ in. permits mounting in limited space. • **Photomation, Inc.**, 96 S. Washington Ave., Bergenfield, N. J.

▲ For more details circle NED-529 C on enclosed inquiry slip ▲

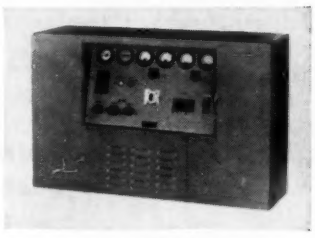
STAINLESS STEEL CONVEYORS
helicoid screw, ribbon flight types



Diameters from 4 to 12 in. are available in this line of stainless steel helicoid screw conveyors and ribbon flight conveyors. They have outboard mounted bearings and inboard removable mechanical seals or stuffing boxes. Drop-bottom troughs are held in place by quick-opening clamps. Top covers are secured by pivoted U-clamps or toggle clamps. Neoprene gaskets make the units dust-tight. Discharge end of a 9-in. diameter helicoid screw conveyor is shown. • **Bucket Elevator Co.**, 57 Union Place, Summit, N. J.

▲ For more details circle NED-530 C on enclosed inquiry slip ▲

MOTOR-ALTERNATOR SETS
provide stable 60 or 400 cps power



Precisely-regulated motor-alternator sets from 5 to 40 kw in 120 models provide stable alternating current line power at either 60 or 400 cps, single or three-phase, even when driven by the most erratic commercial power lines. Sets are intended for use with electronic computers, missile ground systems, industrial automation and processing equipment, and similar large electronic systems depending on stable power input. They are regulated in both frequency and voltage, and many are the brushless type requiring almost no maintenance. Regulating circuitry is solid state. Typical small ac-ac package is shown. • **Electric Specialty Co.**, 206 South St., Stamford, Conn.

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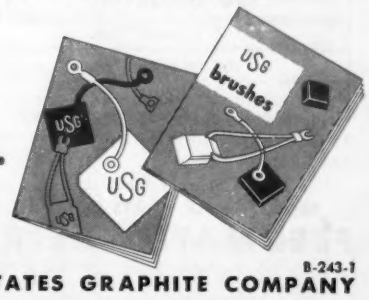
BRUSHES

The solution to many major or minor brush problems can be solved with United States Graphite Company's USG Brushes. The shunt connections are permanent. Sizes are accurate for each application from fractional horsepower to locomotive diesel generator. Grades include carbon, carbon-graphite, electrographilitic, graphite, metal-graphite and silver graphite.

There is helpful, useful data in the complete but CONCISE USG Brush catalog B-56 and the USG grade list. Write for your copies today.



B-243-1

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DIVISION OF THE WICKES CORPORATION • SAGINAW 10, MICHIGAN

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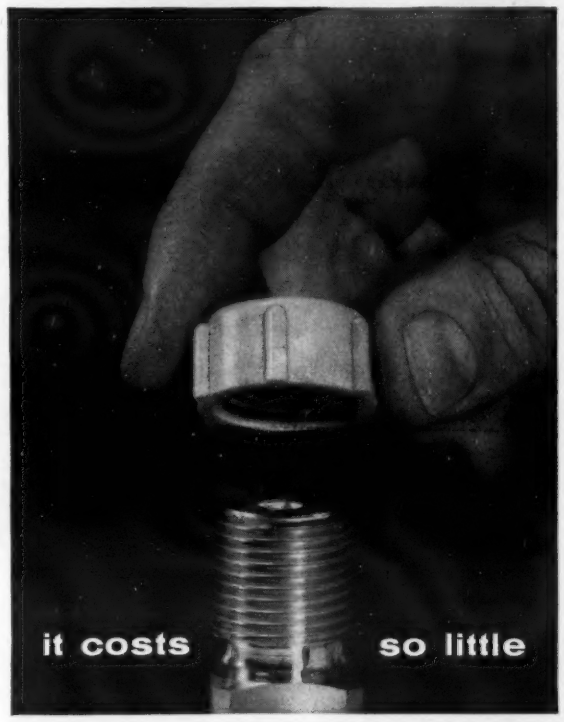

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The quality line—of rigid acetate... tough, non-brittle, impervious to petroleum-base oils and greases, outstanding impact strength.

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1063

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Dept. 7P • 10 East 40th Street • New York 16, N.Y.

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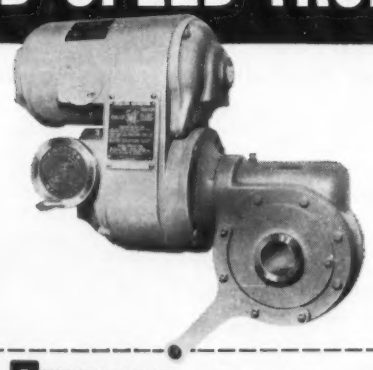
For Variable Speed Applications where Space is limited...

NEW STERLING SHAFT-MOUNTED SPEED-TROL



A new Sterling power drive—the first shaft-mounted mechanical variable-speed drive for commercial applications—is now available: the new Sterling Shaft-Mounted Speed-Trol... designed for variable-speed applications where space limitations require the output shaft to be at right angles to the transmission. It is especially suitable for installations where compactness and light weight are desirable.

The new Sterling shaft-mounted design is not only the most simplified method of mounting; it is also the most efficient. Shaft-mounting eliminates all intermediate transmission elements such as couplings and sprockets, allowing the unit to be mounted directly to the drive shaft.

The new Sterling Shaft-Mounted Speed-Trol is available in drip-proof or totally-enclosed constructions, in ratings from ½ to 3 horsepower, and features speeds from 360 to 5.2 rpm, with speed variations up to 10:1. It is available with a wide variety of both electrical and mechanical modifications to meet your requirements.

For further information, mail the coupon below for a free copy of the Sterling Speed-Trol Variable-Speed Drive Bulletin.

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STERLING ELECTRIC MOTORS, INC.
5401 Telegraph Road, Los Angeles 22, California
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at the industry's lowest prices!

If your operation involves the manufacture or processing of parts in volume quantities, it will pay you to investigate the cost saving advantages of Feedmatic-Detroit automated equipment.

COMPARE THESE LOW FEEDMATIC PRICES *on Standard Rotary Hoppers*

14" DIAMETER	$185.00*
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All prices include 115 volt totally enclosed electric motor. 220/440 volt motor $10.00 additional.

Automatic pick-up and placement units available for complete automation of assembly process . . . designed to meet your specific requirements.

**Tracks extra, subject to quotation.*

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Rotary Hoppers • Floor Hoppers • Automatic Gaging Machines

Automatic Assembly Machines

NO TRAFFIC JAMS HERE!

"Ruff-Top" handles all sizes . . . at any angle up to 43°

Quaker Thermoid "RUFF-TOP" CONVEYOR BELTING

If continuous conveying of packages, cartons, boxes, and other smooth, flat objects is your problem, "Ruff-Top" is the answer. Its thousands of small, rough, irregular-shaped points of soft rubber take a firm grip on the lightest load.

There's a Thermoid-Quaker Belt to do your conveying job at the lowest cost per ton of material moved. Consult your Thermoid distributor, or write today direct to *Thermoid Division, H. K. Porter Company, Inc., Tocony and Comly Streets, Philadelphia 24, Pa.*

THERMOID **PORTER** *DIVISION*

H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with 14 DIVISIONS including: Thermoid, Delta-Star Electric, National Electric, Peerless Electric, Riverside-Alloy Metal, Refractories, Connors Steel, Vulcan-Kidd Steel, Forge and Fittings, Disston, Leschen Wire Rope Mouldings H. K. Porter Company de Mexico, S. A., and H. K. Porter Company (Canada) Ltd.

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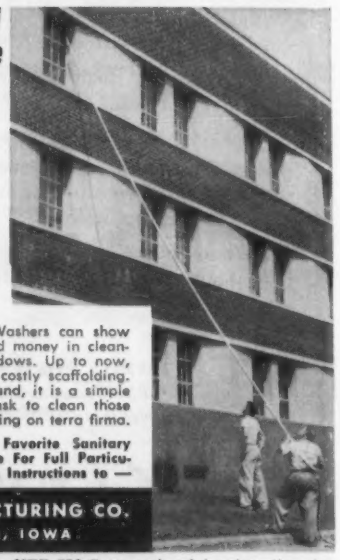
NOW WASH WINDOWS HIGH or LOW *FASTER AND SAFER* with a Tucker Window Washer

TUCKER WINDOW WASHERS *Feature*

- TELESCOPIC HANDLES
- AUTOMATIC, VISIBLE DETERGENT
- COMPRESSED DETERGENT
- SPECIAL WINDOW BRUSHES



Easy to Operate

If your custodian wants to try a Tucker Window Washer, we will ship prepaid with the understanding that the washer may be returned for cancellation if not satisfied.

ONLY TUCKER Window Washers can show you how to save time and money in cleaning your inaccessible windows. Up to now, it was necessary to erect costly scaffolding. With a Tucker window wand, it is a simple time and money-saving task to clean those windows . . . and by standing on terra firma.

Available Through Your Favorite Sanitary Supply Dealer . . . or Write For Full Particulars, Prices and Measuring Instructions to —

TUCKER MANUFACTURING CO.

CEDAR RAPIDS, IOWA

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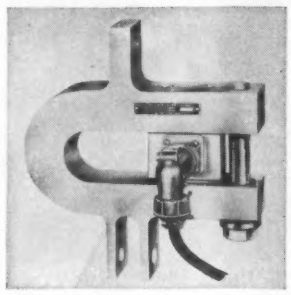
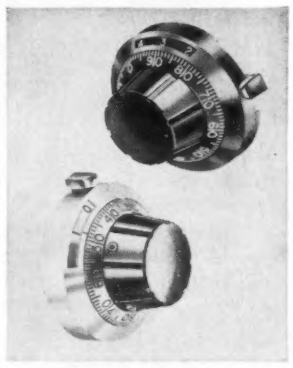
FORCE CONTROL SWITCH
capacities are 5 to 50,000 lb



U-shaped beam of this force control switch moves outwardly to actuate Micro Switches at various preset points by means of recessed adjustment screws. Dust and moistureproof switch case at the center suits the unit for heavy duty and continuous outdoor use. Up to four Micro Switches, operating separately or at the same load point, can be furnished preset to specifications. Capacities from 5 to 50,000 lb are standard in both compression and tensile models. Applications include hoist and crane overload protection, remote indications, and operation of warning signals. Tensile models have a safety bolt and 4:1 safety factor. • **W. C. Dillon & Co.,** 14620 Keswick St., Van Nuys, Calif.

▲ For more details circle **NED-537 C** on enclosed inquiry slip ▲

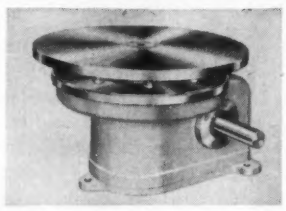
TURNS-COUNTING DIALS
for instruments and controls



The number of turns of a shaft are indicated exactly to 0.01 turn by Duodial turns-counting dials. Models RBC and RBD are mechanically identical, but the latter has ebony finish with white filled numerals. Working parts consist of two coaxial dials, the inner calibrated in hundredths of a turn and the outer in full turns. Readings are free of backlash as the black nylon knob is connected directly to the shaft of the instrument or component it serves. Capacity is 15 full turns, without mechanical stops. • **Beckman Instruments, Inc.,** Helipot Div., 2500 Fullerton Rd., Fullerton, Calif.

▲ For more details circle **NED-538 C** on enclosed inquiry slip ▲

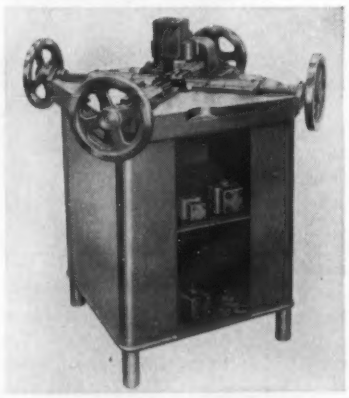
TURRET INDEXING UNIT
for bench or machine chassis use



Eight work stations and an index-to-dwell relationship of 1:1 (180-degree index) are built into the Series J turret indexing unit. Mechanical unit has a 12-in. diameter turret and a hardened steel cross-over indexing cam. Unit is built for semiautomatic bench operations or for use as a small automatic machine chassis, but may be employed as an auxiliary turret on larger machines. It incorporates a 1/4-hp, 220-v drive motor, reduction unit, and main cam shaft extension for mounting tool-actuating cams. Foot type (shown) and flange type table mountings are available. • **Swanson-Erie Corp.,** 814 E. Eighth St., Erie, Pa.

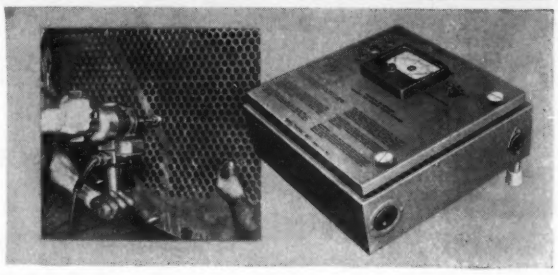
▲ For more details circle **NED-539 C** on enclosed inquiry slip ▲

TOOL TRYOUT FIXTURE
aids four-slide machine tooling



Used in the design and building of tooling for seven models of Nilson four-slide machines, No. 00-2 tool tryout fixture enables the toolmaker to do his tool testing and sample making independent of the machine. Mounted on a welded pedestal base, standard fixture consists of four screw-actuated slides, each operated by a 10-in. handwheel. Center form bracket accepts fives sizes of center form holders. Standard and special accessories facilitate tool tryout for all machines. • **A. H. Nilson Machine Co.,** 1000 Bridgeport Ave., Shelton, Conn.

▲ For more details circle **NED-540 C** on enclosed inquiry slip ▲



Your Motor + Wiedeke Torque Control = Increased Tube Rolling Production

Save the cost of a new motor! New Torque Control Instrument for rolling 1/4" through 4 1/2" tubes in boilers, condensers and similar heat transfer vessels—operates with any Universal Reversible Electric Tube Rolling Tapper or Motor. Adjustable time cycle matches operator's dexterity.

WRITE TODAY FOR DETAILS AND BULLETIN AC-7A

The Gustav WIEDEKE Company
Dayton 1, Ohio

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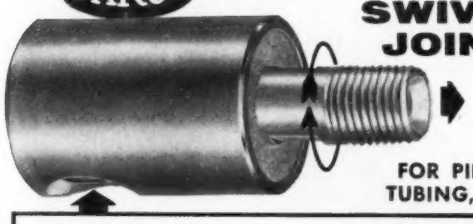
Here's How to Make Hose Work Better, Last Longer!

BARCO LOW COST, BALL BEARING **SWIVEL JOINT**



FOR PIPING, TUBING, HOSE

For Hydraulic or Pneumatic Service

Here is the *new* BARCO SINGLE PLANE SWIVEL JOINT that swivels in one plane only. Ideal for use as a *swivel connector:*

- **Key to Better Engineering!** Small, light, inexpensive. Very low torque under pressure. Neat, space-saving installations. Easy to position lines accurately.
- **Many Uses:** (1) To make piping or tubing movable, flexible! (2) As swivel connectors on hose to eliminate torsional working stresses and long radius bends. Longer hose life! Shorter lengths required!
- **Sealed, Unitized Construction.** Built with ball-bearings. O-ring seal. Choice of styles; sizes 1/4", 3/8", 1/2", 3/4". For service to 2,000 psi, −20° to 225°F. Other types available for higher ratings. *Ask for Catalog Sheet 406.*

BARCO MANUFACTURING COMPANY

530D Hough Street • Barrington, Illinois

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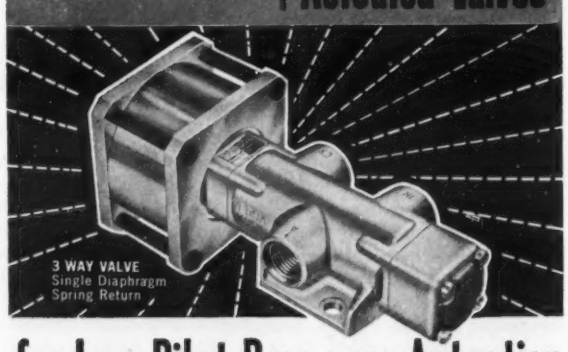
VERSA | *Diaphragm Actuated Valves*



for Low Pilot Pressure Actuation

- Versa Diaphragm Valves can be actuated by pilot (or signal) pressures as low as 5 PSI on double diaphragm types and as low as 10 PSI on standard spring return models.
- Versa Diaphragm Valves are available with side port bodies or for manifold mounting, and in sizes from 1/8" thru 1" NPT in 2-, 3-, 4-, and 5-way types, and for pressures from partial vacuum to 500 PSIG.
- All Versa Valves are triple pressure and functionally tested under water for guaranteed leakproofness.

VERSA

VERSA PRODUCTS COMPANY INC.
150N COOLIDGE AVENUE
ENGLEWOOD, NEW JERSEY

- Write Today for your free copy of bulletin 259

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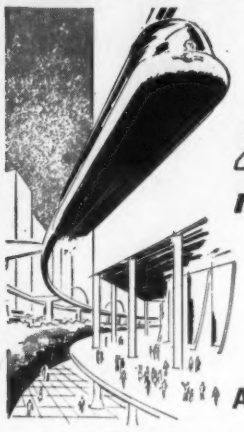

ZOOMING
INTO YOUR FUTURE

Public transport borrows ideas from American MonoRail

Someday you may ride to work this way because public transport officials borrow from efficient handling methods developed by American MonoRail engineers. For over thirty years all kinds of materials have moved on monorail tracks in nearly every industry—and beginning with hand pushed carriers, today's developments include systems that are completely automatic from pick-up to deposit. Heavy—bulky—hard to handle loads travel quickly, safely and directly to their destination—through the air. Only the research and experience of American MonoRail engineers make this equipment possible.

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AMERICAN MONORAIL
1116 E. 200th STREET
CLEVELAND 17, OHIO

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cold headed FASTENERS and small parts

Just to give you a real live, in your hand, sample of the tremendous possibilities in cold heading, we'd like to send you absolutely free a sample package of typical Hassall products.

Just check the inquiry card and your samples will be on their way.

Hassall
MANUFACTURERS SINCE 1850

JOHN Hassall INC.
P. O. Box 2178
Westbury, Long Island, N. Y.

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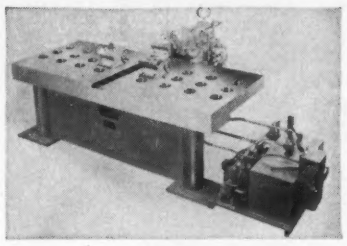
TUBE STRAIGHTENING PRESS
100-ton model has 24-in. stroke



Nonferrous tubes of various diameters are straightened on this horizontal straightening press. It has two 5-in. diameter pins with swivels. Nylon liners in the swivels protect the high bed finish during operation. The illustrated 100-ton, self-contained press has sensitive hand control. The moving ram face is guided in the dovetail during its 24-in. stroke. Bed measures 48 x 108 in. Press is powered by a 7½-hp double-end motor. ● **K. R. Wilson, Inc.**, Arcade, N. Y.

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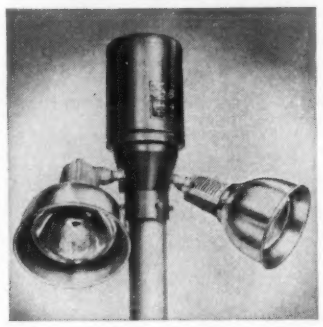
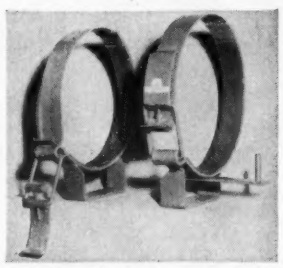
MERCURY VAPOR FLOODLIGHT
is weatherproof for exposed areas



Full-floating socket of this floodlight adjusts automatically to variations in lamp sizes and shapes to make it weatherproof with all R-60 reflector lamps, including 400-w mercury vapor and 750-1000-w incandescent types. Heavy duty compression spring socket mount eliminates causes of premature lamp failure such as excessive vibration, shock, pole whip, arcing, socket corrosion, and water seepage. Floodlight is especially suited for use in company parking lots, storage yards, loading platforms, and around plant grounds. ● **Stonco Electric Products Co.**, 333 Monroe Ave., Kenilworth, N. J.

▲ For more details circle NED-548 C on enclosed inquiry slip ▲

LP-GAS CYLINDER BRACKETS
mount on many industrial trucks



Made of heavy gage steel lined with nonslip web, Sure-Lok mounting brackets for LP-gas fuel cylinders are available in models to fit all industrial trucks. They feature positive clamping, adjustable tension, single or double hinge straps, and vertical or horizontal mounting. Models for 20, 33, and 43-lb cylinders and 14 and 20-lb tanks are available. ● **Industrial Gastruck, Inc.**, 2019 Dempster St., Evanston, Ill.

▲ For more details circle NED-549 C on enclosed inquiry slip ▲

Colletta

PORTABLE BENCH LABELER

Handles wide range of shapes and sizes • Blister-free Application
Fast Changeovers • Precision Built

Write for bulletin No. 138

PNEUMATIC SCALE CORPORATION, LTD., 71 Newport Avenue, Quincy 71, Massachusetts. *Sales Offices: New York; Chicago; Dallas; Rochester. Agents: Fred Todt Company, Los Angeles, San Francisco and Seattle; Rockwell Pneumatic Scale Ltd., London N. W. 2, England; O. R. M. A. Paris, France. Subsidiaries: Delamere & Williams Co., Ltd., Toronto: Carbert Manufacturing Co., Inc., Cambridge, Mass.*

PNEUMATIC *Packaging and Bottling Equipment*

▲ For more details circle NED-550 C on enclosed inquiry slip ▲

SUNNEN

PORTABLE HONES

SAVE MANY HOURS IN PRODUCTION, SALVAGE, JOB LOT, MAINTENANCE AND TOOL ROOM

More than 100,000 satisfied users testify to the utility of these "Tools of a Thousand Uses" for internal diameter work in nearly all materials.

Sunnen Portable Hones are guaranteed to produce geometrically round, straight bores—accurate within .0005"—with any desired cross-hatched, lubricant-retaining finish.

- CORRECTS MACHINING ERRORS
- EXACT SIZE CONTROL
- CONTROLLED SURFACE FINISH
- FASTEST STOCK REMOVAL
- POSITIVE ADJUSTMENT
- PORTABLE, YET RUGGED
- OPERATES IN ANY POSITION

Your Sunnen Field Engineer will be glad to help you solve your sizing problems at no obligation to you.

SN-75 Midget Hone	Range 1¾" to 2"
JN-95 Junior Hone	Range 2" to 2⅝"
AN-112 Standard Hone	Range 2½" to 7"
AN-812 Heavy-Duty Hone	Range 4¾" to 20½"

WRITE FOR FREE BOOKLET!

Find out how SUNNEN PORTABLE HONES can help you in your everyday shop work.

SUNNEN PRODUCTS COMPANY
HONING
7933 J Manchester Ave. • St. Louis 17, Mo.
Canadian Factory: Chatham, Ontario
7269

▲ For more details circle NED-551 C on enclosed inquiry slip ▲

WHAT } makes the right
WHO } coil springs for you?

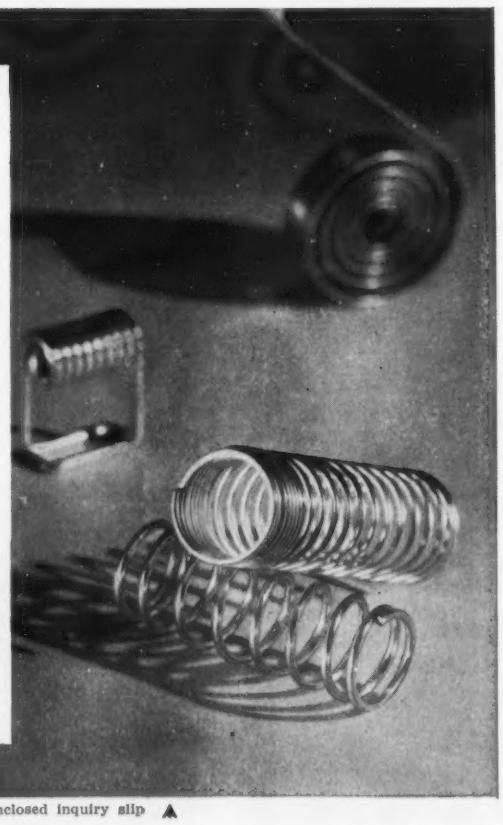
Supplying the *right* extension, compression or torsion springs for your specific requirements takes an engineering service capable of providing the *right* design, the best possible material and the correct temper for your springs. The production of springs that perform according to specifications is a manufacturing service we have developed over many years of specialized spring experience. We have the ability to handle your spring requirements with maximum speed and efficiency. We can make prompt deliveries because of our modern production facilities.

FOR ADDITIONAL INFORMATION, send for Engineering Data Sheets . . . or simply write to us outlining your coil spring requirements. Also available are Data Sheets on Stanley-Humason Fasteners, Metal Stampings, Screw Machine Parts, Wire Forms, and Assembled Products.

STANLEY-HUMASON, INC.
A Subsidiary of The Stanley Works
Dept. C, 58 Stafford Avenue
FORESTVILLE, CONNECTICUT

STANLEY ®

SPRINGS • WIRE FORMS • STAMPINGS • SCREW MACHINE PRODUCTS • ASSEMBLIES



▲ For more details circle NED-546 C on enclosed inquiry slip ▲

Get safe, maintenance-free plant heating with

Perkins AIRadiators operate on hot water or steam up to 150#. No motors, fans, or other moving parts that can cause sparking, or wear out—Perkins AIRadiators are maintenance-free, built to last the life of your plant. Heat is evenly distributed—quietly, without drafts or hot blasts.

Write for Bulletin V
. . . Learn how Perkins AIRadiators can give you better plant heating—at low cost.

SHAW PERKINS MFG. CO.
Properly Designed Room Heat Distribution Equipment
201 E. CARSON ST., PITTSBURGH 19, PENNA.

▲ For more details circle NED-552 C on enclosed inquiry slip ▲

CONVEYORIZED PACKAGING
for Speed • Economy • Uniformity

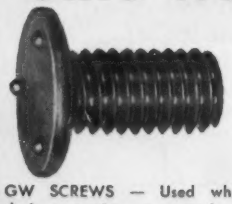
Power Belt Conveyor furnished standard 18"; 22"; 30" O.A. Widths with 12"; 16"; 24" belt widths. Length to suit. Used with gravity roller or wheel conveyors — NYLO-® Bearings.

Tell us your requirements. Our Recommendation is free.

METZGAR CONVEYOR CO.
416 Douglas St., N.W.
MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES
GRAND RAPIDS 4, MICH.

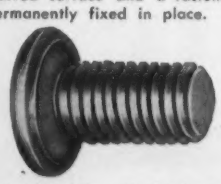
▲ For more details circle NED-553 C on enclosed inquiry slip ▲

OHIO WELD SCREWS

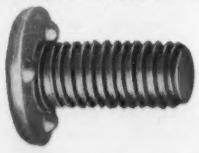


GW SCREWS — Used where design requires a smooth unmarred surface and a fastener permanently fixed in place.

HH SCREWS — Used where a single, button-type projection is required when welding to curved surfaces, to heavy sheet 3/32" or thicker, or to ends of rods.



RW SCREWS — Used where a hermetic seal is required to prevent leakage of air, gas, water, oil or dust, or when welding to perforated metal or wires.



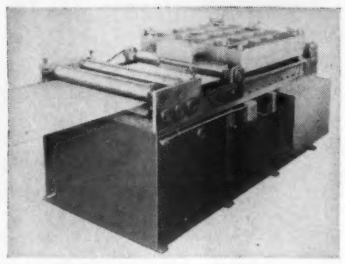
HW SCREWS — Used where a self-locating through bolt is required to be fixed securely in place so that it will not turn and a flush surface is required for attaching mating parts.

Thread Size 6-32 to ⅜-16
Samples and information available upon request.

The OHIO WELD FASTENERS Primary Fastener in Fastener Assemblies
THE OHIO NUT AND BOLT CO.
14 FIRST AVENUE, BEREA, OHIO

▲ For more details circle NED-554 C on enclosed inquiry slip ▲

DIE CUTTING PRESS
for blanking, punching, scoring



Usable on paper, plastic, and metal stock, this Model P-50 automatic multipurpose die cutting web press will perform high speed blanking, punching, and scoring. It handles 50-in. web width and will die cut stock in thicknesses from 0.0005 in. and up to any thickness that is supplied in web or roll form. Speed ranges to 200 platen strokes per minute, and with an automatic sheeter, it will produce 12,000 sheets measuring 50 x 50 in. per hour. Easy to operate and equipped with full safety controls, it can be furnished with printers for imprinting one or both sides of sheets in one or more colors. Embossing equipment, stitchers, and gluers are also available. • **Karr Engineering Service, Inc.**, 2920 W. Clybourn St., Milwaukee, Wis.

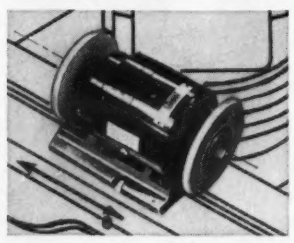
▲ For more details circle NED-555 C on enclosed inquiry slip ▲

MACHINE TOOL SAFETY SWITCH
use of chuck key shuts off current

Mounted on any machine tool which uses a key - operated chuck, Pow - R - Off safety switch provides complete operator safety by shutting off power when chuck key is in use. Key is attached to a cable on a spring wound drum. When the key is pulled out for use, the switch is tripped, shutting off the current. When key is no longer in use, cable retracts and current is restored so that machine can operate. • **H B Research & Development Co.**, 11719¼ E. Washington Blvd., Whittier, Calif.

▲ For more details circle NED-556 C on enclosed inquiry slip ▲

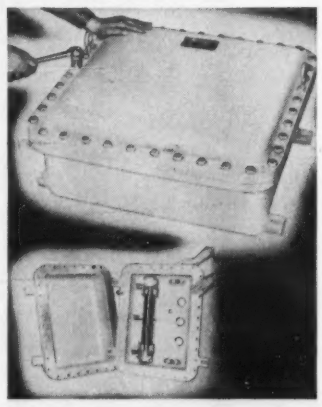
DIAMOND WHEEL DRESSER
held to bed by clamp or magnet



Diamond grinding wheels are dressed with a minimum of removal and loss of the expensive diamond surface by this self-contained dresser. Its 3450-rpm motor-driven dressing wheels run opposite to or at an angle to the rotation of the diamond wheel for rapid cleaning and dressing of loaded, out-of-round, off-angle, and nicked wheels. Slotted base is held by clamp or magnet to the machine bed, and it is accurately fed with the grinder table feed. The double-end, 115-v, constant speed motor is equipped with two dressing wheels and sells for $39.50. • **Bollier-Damerell, Inc.**, Niagara Cutter Div., 330 Niagara St., North Tonawanda, N. Y.

▲ For more details circle NED-557 C on enclosed inquiry slip ▲

EXPLOSIONPROOF HOUSINGS
of cast aluminum are UL-listed



Cast from aluminum alloy, explosionproof housings are UL-listed for Class I, Group D, and Class II, Groups E, F, and G hazardous locations. Rustproof, nonsparking, nonmagnetic and lightweight, they are suited for enclosing starters, relays, terminal panels, and electric components. Furnished in blank from stock in 33 sizes up to 24 x 24 x 8 in., they are drilled and tapped to specification. Other modifications include instrument windows and removable insulating boards. • **Adalet Mfg. Co.**, 14300 Lorain Ave., Cleveland 11, Ohio.

▲ For more details circle NED-558 C on enclosed inquiry slip ▲

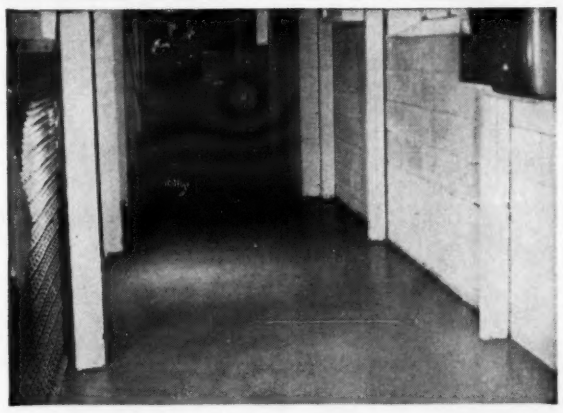
David Round **Jib Cranes**
SERIES 300
PILLAR TYPE - SELF SUPPORTING

HEADS AND WEAR RINGS
Available Separately
Write for BULLETIN 225-JC

Chain Hoists—Electric Hoists & Winches
Cranes—Sheaves & Chain

DAVID ROUND & SON, INC., CLEVELAND 22, OHIO

▲ For more details circle NED-559 C on enclosed inquiry slip ▲



Permanent color for concrete with KWIK-COLOR

Here's an easy way to add permanent color to your concrete floors . . . and eliminate concrete "dusting" forever!

KWIK-COLOR SEAL is a superior concrete beautifier and preserver made from an emulsified plastic resin. Odorless, non-inflammable, water-resistant, easy to apply. Dries in 20-30 minutes. Busy floors are back in service within 2 hours after etching, sealing, and waxing.

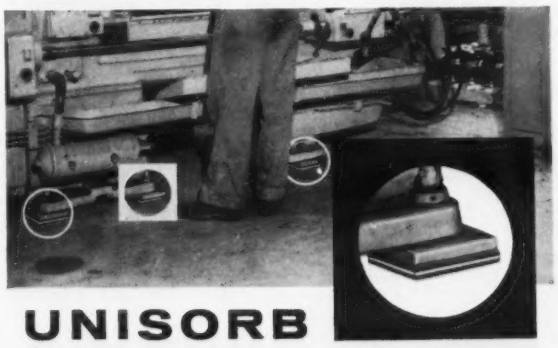
Available in *permanent*, non-fading Tile Red, Light Gray, and Light Green colors.

For more information, call your MULTI-CLEAN Distributor or write!

MULTI-CLEAN PRODUCTS, Inc.

MULTI-CLEAN Method
Dept. Ne-81-30. 2277 Ford Pkwy. St. Paul 16, Minn.

▲ For more details circle NED-560 C on enclosed inquiry slip ▲



UNISORB
Saves over $15.00 on Every Machine Installation

The Minneapolis-Honeywell Regulator Co. Valve Division at Fort Washington, Pa., found that Unisorb pads actually pay for themselves! Here's why:

- Labor costs alone saved about $15.00 per machine (mounting time)
- There were savings on anchoring materials
- Reduces noise and vibration up to 85%
- Greatly reduced hours lost in moving
- Machines kept in alignment
- Provides ease of shop rearrangement
- Machines stay anchored in place

Company after company is discovering these same facts — that Unisorb Pads and Unisorb Level-Rite Mounts can save time and money, and cut noise and vibration, every time a machine is installed.

TRY A SET IN YOUR PLANT! UNISORB is available at leading Industrial Distributors, or write direct for the special Unisorb Money-Back Trial Offer.

FE9-63

UNISORB Division of The Felters Co. 224 South St., Boston 11, Mass.

▲ For more details circle NED-561 C on enclosed inquiry slip ▲

BREATHER-FILTER

protects housings, crankcases, storage tanks.

The Air-Maze breather-filter keeps dust out of engine and compressor crankcases, gear-cases, hydraulic equipment, liquid storage tanks and machinery. Types and sizes available in both oil-wetted and oil bath models to protect every vented housing.

In the oil-wetted type, dust is impinged on a series of oil-wetted wire baffles. In the oil bath type, used where the dust concentration is unusually high, the filter media is enclosed in a bowl. Outside air must first pass through the oil, then the filter media, before entering crankcase or housing. Also functions as a backfire flame arrester.

Available in sizes from 1/8" to 3 1/2". Permanent, all-metal, easily cleanable. Write for booklet BC-453. Air-Maze Corporation, Department NE-3. Cleveland 28, Ohio. (Subsidiary of ROCKWELL-STANDARD Corporation)

▲ For more details circle NED-562 C on enclosed inquiry slip ▲

45 LEVER TYPE

models to choose from!

THE WORLD'S MOST COMPLETE LINE

SIMPLEX LEVER JACKS

SINGLE ACTING, RATCHET LOWERING
11 Models, 5 to 20 tons capacity. Full capacity on toe or cap.

EMERGENCY & BRIDGE JACKS
2 Models, 15 tons capacity. Pivot on base.

POLE PULLING & STRAIGHTENING JACKS
3 Models (One aluminum alloy) 5 to 15 tons capacity. Standard of Bell System.

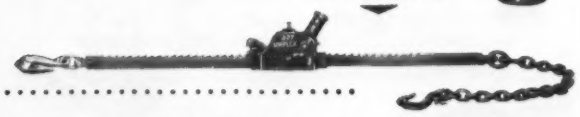
REEL JACKS
3 Models (One Aluminum alloy) 5 to 10 tons capacity. "T" Base.

GEARED JACKS
3 Models, 25 to 35 tons capacity. Side toe lift.

MINE TIMBER JACKS
4 Models (One has trip mechanism). Single and double acting.

TRACK (TRIP) JACKS
13 Models (Five aluminum alloy) Single and double acting.

BELT TENSIONING JACK
5 ton capacity.



Also Lever type, Cable & Wire Tensioning, Pipe Pushing & Pulling, Tie Remover, Tie Replacer, and Siding & Flooring Jacks.

Look for further information on Hydraulic and Screw Jacks in other advertisements.

WRITE FOR CATALOG "MECHANICAL 58"

TEMPLETON, KENLY & COMPANY
2565 Gardner Road
Broadview, Illinois

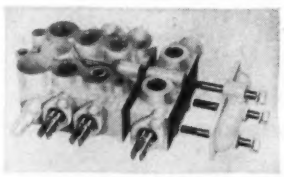
▲ For more details circle NED-563 C on enclosed inquiry slip ▲

GROOVE GAGES
dial type checks internal grooves

Internal groove dimensions are instantly read on dial indicator of this lever action E-Z Dial Groove Gage without removing work from the machine. Indicator has range from 0.2 to 1.6 in., with small dial reading to the nearest hundredth and the large dial, to the nearest half-thousandth of an inch. Four gages have location depth ranges from 15/16 to 2 3/8 in. They can measure grooves from 0.080 in. deep to 0.350 in. accurately within 0.0005 in. Gages are shockproof and weigh only 3 1/4 oz. Each unit has its own mahogany case. • **Maxwell Industries, Inc.**, 493 E. Fifth St., Ashtabula, Ohio.

▲ For more details circle NED-564 C on enclosed inquiry slip ▲

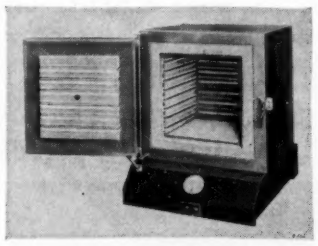
CONTROL VALVE
operating sections added as needed



Made on a sectional principle, Series V-34 Hydreco control valve is usable on lift trucks and other mobile equipment where supplementary operations are frequently added to standard models. Valve consists of a two-plunger cast-in-block section with integral pilot-operated relief. Mounting holes, and pump and tank connections are in the basic section. Additional operating sections can be added in the field without disturbing the original connections. • **New York Air Brake Co.**, Hydreco Div., 9000 E. Michigan Ave., Kalamazoo, Mich.

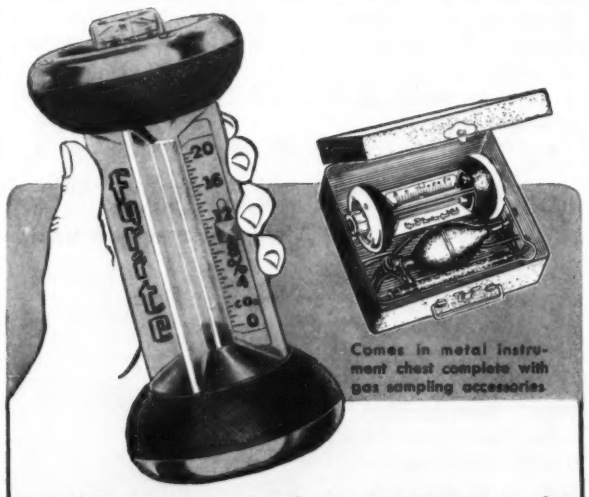
▲ For more details circle NED-565 C on enclosed inquiry slip ▲

HEAT TREATING FURNACES
heats up to 2000° F in 1 hr



Constant temperature level from 300 to 2300° F is maintained in Dyna-Trol heat treating furnaces by means of zone input controllers, set at from 7 to 100 per cent of input. Gradients are indicated by a pyrometer with two thermocouples located zonewise and a thermocouple selector switch. The small, compact furnace heats up to 2000° F in 1 hr and to 2300° F in 1 1/2 hr. Available models are 6 x 4 1/2 x 4 1/2 in., 6 x 6 x 6 in., and 18 x 6 x 6 in. Some operate on 110 v and others have automatic temperature control. Each can be equipped with a forced convection fan. • **L & L Mfg. Co.**, 804 Mulberry St., Upland, Chester, Pa.

▲ For more details circle NED-566 C on enclosed inquiry slip ▲



ACCURATE CO_2 Analysis in 40 Seconds!

Other outstanding features of the FYRITE CO_2 Indicator are its durable, fool-proof construction and unmatched convenience of operation. It requires no setting-up, has no valves or leveling bottle to manipulate.

The FYRITE measures CO_2 directly by the fundamental method of chemical absorption. Consequently, the reading is independent of voltage, humidity, temperature, or atmospheric pressure conditions.

Comes complete with chemical charge good for at least 300 readings. Replacing chemical merely requires removing four screws that hold top assembly in place.

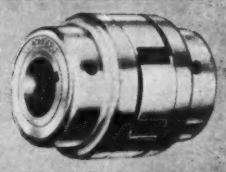
Write for Bulletin 805

BACHARACH Industrial Instrument Company
200 N. Braddock Ave. • Pittsburgh 8, Pa.

▲ For more details circle NED-567 C on enclosed inquiry slip ▲

NEW! FROM CHARLES BOND . . .

FOR GREATER ECONOMY
LONGER MACHINE LIFE



BONDTRU® ALUMINUM INSULATED FLEXIBLE COUPLINGS

Here's the ideal coupling for light-duty applications up to 10 H.P. at 1800 R.P.M. Simplified construction of non-corrosive aluminum offers you low initial and maintenance costs plus a weight reduction of up to 60% of comparable iron couplings. No lubrication is required. And because of Bondtru's simplified three-part construction you get the benefits of quick and easy installation as well as reduced downtime for replacement and maintenance.

Bond's self-aligning feature protects motors and machines from wear caused by end-play, lateral and angular misalignment, for longer life.

Other features are:

- Non-conducting insert eliminates static and dynamic electricity and absorbs shock and torsional vibration.
- All-rounded edges promote operator safety.

This great new all-purpose coupling represents another advance stemming from Bond's continuing research for new and better power transmission products.

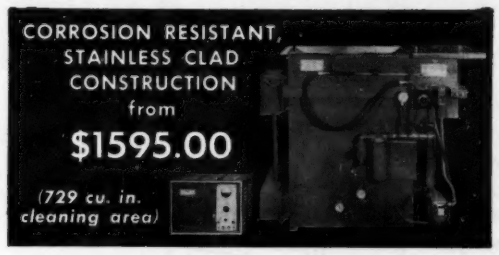
CHARLES BOND IS YOUR BEST SOURCE FOR A BASIC LINE OF POWER TRANSMISSION COMPONENTS!

SPEED REDUCERS | GEARS | SPROCKETS CHAINS | FLEXIBLE COUPLINGS | UNIVERSAL JOINTS COLLARS PILLOW BLOCKS

CHARLES BOND COMPANY
617-23 ARCH STREET • PHILADELPHIA 6, PENNSYLVANIA

▲ For more details circle NED-568 C on enclosed inquiry slip ▲

For absolute cleanliness, low cost CIRCO ultrasonic degreasers and washers



In case after case, where **absolute** product cleanliness is critical, CIRCO does the job...does it faster...does it cheaper. Choose from standard models to huge custom-designed conveyerized systems, **or** convert your present cleaning equipment merely by adding CIRCO ultrasonic transducers and controls. And, where conventional cleaning is sufficient, CIRCO offers a complete line of degreasing and washing units and degreasing solvents.

CIRCO Equipment Company
Specialists in Ultrasonic Energy
51 Terminal Ave., Clark, New Jersey • FUlton 8-8600

▲ For more details circle NED-569 C on enclosed inquiry slip ▲

ROTARY SWITCHES *with*

QUICK-CONNECT TERMINALS

ESCO 10 amp. Type P switches are now available with quick-connect terminals for easy installation or removal by snap-on wiring.

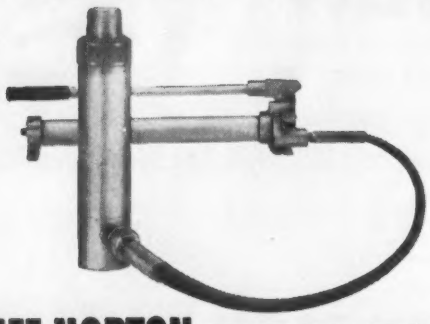
- Standard quick-connect terminals
- Electrical ratings
  10 amp. 125 v a-c 5 amp. 125 v d-c
  5 amp. 240 v a-c 3 amp. 450 v a-c
- 1 to 8 poles; additional pole applications upon request
  - base mounting or panel mounting
  - supplied with snap or detent action

For details write for Bulletin No. 20 today.

ESCO of WEYMOUTH
ELECTRO SWITCH CORP.
Weymouth (Boston 88), Massachusetts

▲ For more details circle NED-570 C on enclosed inquiry slip ▲

VERSATILE POWER PACKAGE



DUFF-NORTON RAM-PAC®

HYDRAULIC RAMS AND PUMPS

The Duff-Norton Ram-Pac line provides a versatile source of power to apply from 10 to 100 tons of force in any direction—with little effort.

The twelve rams may be used with the hand or power pumps as portable sources of power and for permanent installation in hydraulic jigs, fixtures and presses.

The Ram-Pac line has five pumps—two hand, one air-hydraulic, one electric and one gasoline. Attachment units and accessories are available. For details ask your distributor or write for Bulletin AD-90—N.

DUFF-NORTON COMPANY
P. O. BOX 1889, PITTSBURGH 30, PA.

▲ For more details circle **NED-571 C** on enclosed inquiry slip ▲

H&K PERFORATED MATERIALS

. . . the most complete selection of traditional and contemporary designs

. . . for all requirements, industrial and decorative

. . . facilities for perforating most metallic and non-metallic materials

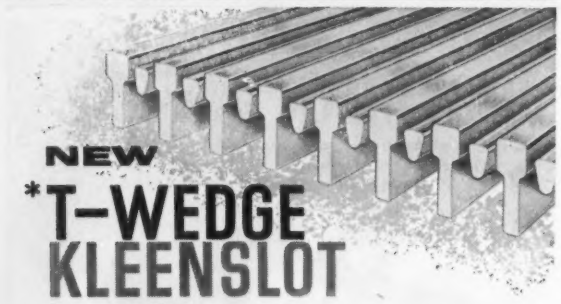
FIND NEAREST H&K AGENT IN THE 'Yellow Pages' — Listed Under "Perforated Metals"

Write for General Catalog 75 and/or Stock List Brochure

THE Harrington & King PERFORATING CO. INC.

Chicago Office and Warehouse • *New York Office and Warehouse*
5658 Fillmore St., Chicago 44 • 114 Liberty St., Dept. NED, New York 6

▲ For more details circle **NED-572 C** on enclosed inquiry slip ▲



NEW

*T-WEDGE KLEENSLOT

(preparation screen)

"T" and "WEDGE" wire combine to create the ultimate in . . .

GUARD BAR DESIGN –high "T" profile wire between every wedge shaped wire performs as guard bar *and* screen

GUARD BAR ECONOMY –new design effects added screening surface, small screen efficiency with large screen life

with ***I.F.A.**—*independent flexing action*

Especially adaptable for flumes or vibrator applications — can easily be interchanged with other types of Kleenslot screens without mechanical changes — abrasion resistant stainless steel

**patent applied for*

for additional information—write

WEDGE-WIRE CORPORATION Wellington, Ohio

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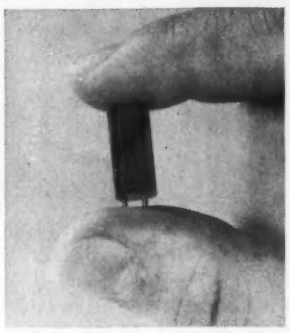
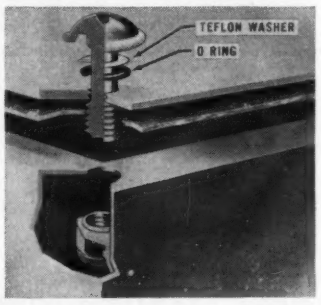
OVER-TEMPERATURE PROTECTOR responds to current and temperature



Designed for subfractional horsepower motors with diameters of 1 in. and larger, the Klixon 5891 inherent over-temperature protector is equally suited for small solenoids and transformers. Protector is responsive to both current and temperature. A compensating heating element ensures that the snap-acting disc type sensing element closely follows the temperature changes of the component to be controlled. Temperature levels of protection are 150, 175, and 200° C. Maximum contact capacity is 5 amp at 27 v dc or 120 v ac. Device can be inserted into a cavity, secured to windings, or held by a clip. The 0.28 x 0.20 x 0.60-in. envelope has welded-on leads to specifications. • **Texas Instruments Inc.**, Metals & Controls Div., 34 Forest St., Attleboro, Mass.

▲ For more details circle **NED-574 C** on enclosed inquiry slip ▲

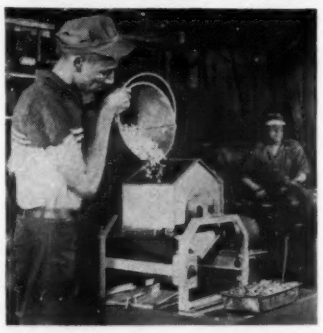
CAPTIVE SELF-SEALING SCREWS for fastening panels, covers, cases



Suited for unlimited re-usability on pressurized covers, panels, and cases, Uniseal captive self-sealing screws form pressure tight closure. O-ring in groove of head can be any of several Mil Spec types, lubricated by a Teflon washer to prevent galling. They are made in standard and special metals, with sealants, configurations, and drives to suit needs of special projects. • **Aero Bolt & Screw Co.**, 1071 W. Arbor Vitae, Inglewood, Calif.

▲ For more details circle **NED-575 C** on enclosed inquiry slip ▲

BARREL FINISHER is low cost, portable machine



Deburring, radiusing, and finishing of small parts are performed rapidly and efficiently by this Handee Slide-Abraser. Portable, low cost, and automatic, this barrel finishing machine requires only loading, setting of automatic timer, and flick of switch. The ¼-hp 115-v ac motor drives the 8-in. wide by 13-in. diameter vinyl-lined drum at 18 or 28 rpm. Wide range of finishing media is available for every need. Price is about $200. • **Chicago Wheel & Mfg. Co.**, 1101 W. Monroe St., Chicago 7, Ill.

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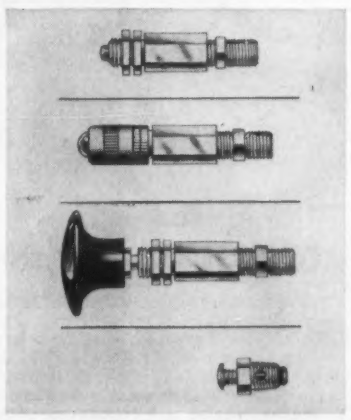
POPPET OPERATING VALVES operate 4 and 3-way Airswitch units



Bleeder poppet valves are designed to operate 4-way and 3-way circuits made of Airswitch units. Basic bleeder valve has ½-in.-20 threads which allow body to be mounted through sheet metal and secured with ½-in.-20 jam nuts. Line consists of the nose-mount straight-thrust button type, a ball-operated unit, a knob-operated unit for mounting on panel or machine operating station, and a miniature button operator for use as a safety auxiliary unit. Standard O-ring sealing gland allows quick repair of valves. • **Airelectric Corp.**, Box 208, Melrose Park, Ill.

▲ For more details circle **NED-577 C** on enclosed inquiry slip ▲

CHECK CORROSION OF YOUR BUILDINGS, STRUCTURES

with Flintkote Asphalt Protective Coatings!

Be sure of longest term durability with ASPHALT BASE CLAY EMULSIONS. *They are specially formulated to meet your most exacting requirements.*

Types:

- C-13-E (non-fibrated) brush or spray applied
- C-13-C4 (lightly fibrated) brush applied
- C-13-A (heavily fibrated) trowel applied
- C-13-HPC (primer-general coating) brush applied

Finish these coatings with Flintkote Aluminum Paint or DECORALT† latex seal in colors for light reflection.

For complete information write: The Flintkote Company, Industrial Division, 30 Rockefeller Plaza, New York 20, N. Y.

†A trademark of the Flintkote Company

FLINTKOTE

Manufacturer of America's Broadest Line of Building Products

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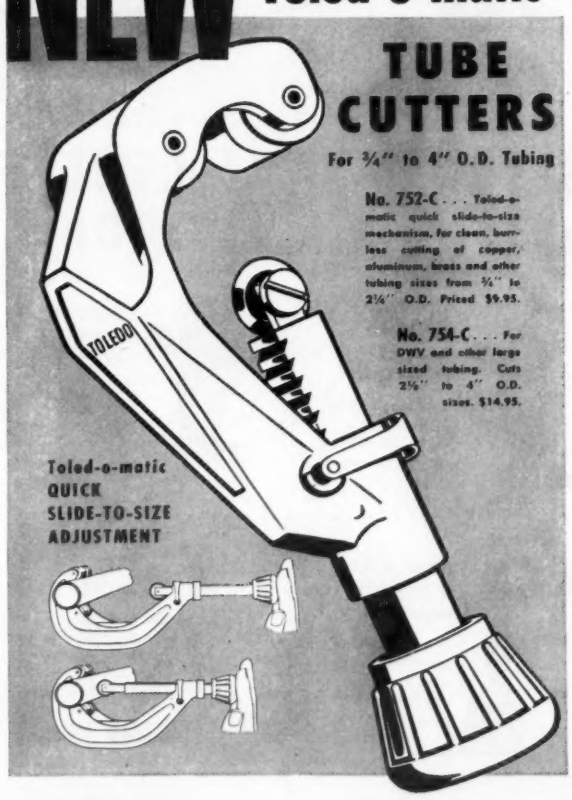
NEW Toled-o-matic TUBE CUTTERS



FAST, CLEAN, BURRLESS RIGHT ANGLE CUTS!

Cut hard or soft copper, brass, aluminum, thin-wall steel, block-tin and lead tubing ⅛" thru 4" O.D. Make clean, right angle cut without burrs or chips to clog the line; leave tube round, ready for flaring.

TOLEDO's new, complete line of tubing tools for cutting, flaring, swaging, bending and reaming assures you guaranteed performance and long service. Get more labor-saving dollars from every tubing job . . . insist on TOLEDO, easily identified in smart red and gold packages.

WRITE FOR CATALOG

TOLEDO® Quality Checked TUBING TOOLS

(Sold Thru Authorized Toledo Distributors Near You)

THE TOLEDO PIPE THREADING MACHINE CO. . . . TOLEDO 3, OHIO

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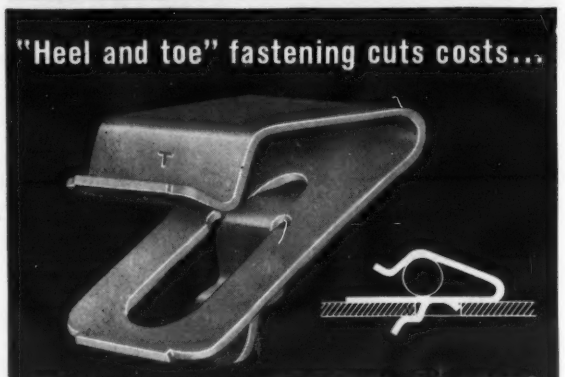
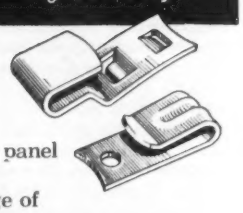
"Heel and toe" fastening cuts costs...



Tinnerman SPEED CLIPS®
hold wire, cable or tubing securely!



- One-piece, spring steel, vibration proof
- Exclusive "heel and toe" fastening feature
- Easy to mount in center panel holes or blind locations
- Available for a wide range of panel thicknesses

Write for free descriptive literature

TINNERMAN PRODUCTS, INC.
BOX 6688 • DEPARTMENT 12 • CLEVELAND 1, OHIO

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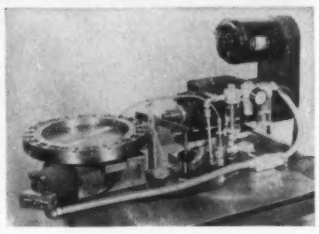
ROTARY INDEXING TABLE positions work accurately

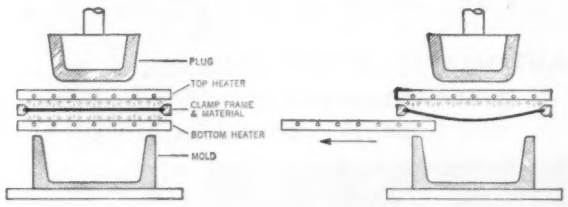


Repeat accuracy within 0.001 in. is assured in this Roto-Spacer by an index plunger in the hardened index plate. Work is accurately positioned for such operations as drilling, staking, tapping, or machining, and the workhead cannot operate until the index shot pin is in place. Standard table has 24 stations, and indexes of 2, 3, 4, 6, 8, 12, and 24 are possible on the 12, 15, or 24-in. diameter workholding plate. It is driven by a 110-v 60-cycle motor through a gear head drive and variable speed control unit. Illustrated is a 15-in. table which is synchronized with an air powered drill head for second operation work. • **M & M Tool & Mfg. Co.**, 1124 E. Third St., Dayton 2, Ohio.

▲ For more details circle NED-583 C on enclosed inquiry slip ▲

VACUUM FORMING MACHINE twin heaters handle heavy plastic panels for draws up to 2 ft deep

Forming cycles for heavy-gage plastics on this MV-2 Series vacuum forming machine are reportedly twice as fast as standard single or stationary double heater



models. Tote boxes, refrigerator liners, washer tubs, and housings up to 4 x 6 x 2 ft deep are formed quickly and accurately from 0.06-in. and heavier gage materials.

Twin heaters, mounted close to the clamp frame, are controlled independently for time and temperature. The bottom heater retracts automatically at the moment of material sag, while the top heater continues heating to the temperature required. Clam type pneumatic clamp frame grips only a ½-in. perimeter of material with pressures to 200 lb/in. and self-adjusts to different material thicknesses. Machines can be used for forming on lower or upper platen, as automatic control of vacuum, air, and heat is supplied to both.

By programming the sequence switches, straight vacuum, drape, snap back, air cushion/plug, plug/drape, and slip ring forming methods are automatically set up. Best method for optimum results is thus selected. Grain finish plastics can be handled. Two lines of machines are available with 30 x 50, 42 x 72, and 48 x 72-in. drawing areas and with 16 or 24-in. maximum draws. • **Auto-Vac Co.**, 1984 State St. Extension, Bridgeport, Conn.

▲ For more details circle NED-584 C on enclosed inquiry slip ▲

For LOW COST Hole Production Pick a MULTI-DRILL® to Fit the Job

Commander MULTI-DRILLS—adjustable multiple spindle drill press attachments—are sold and serviced by a nation-wide network of Commander Distributors—experienced, helpful specialists in solving drilling and tapping problems. Write for the name of your nearest Distributor and the complete Commander Production Tool Catalog which contains full details on every MULTI-DRILL and many other production drilling and tapping tools.

Commander MFG. CO.
4220 W. Kinzie Street • Chicago 24, Illinois

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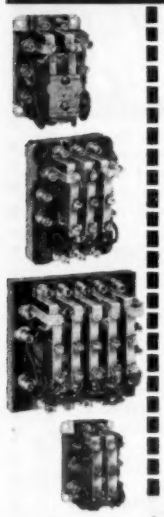
Dunco means relay reliability!

MIDGET RELAYS you can depend on!



Throughout the years, Dunco Midget Relays have rung up a remarkable record for dependability on every type of application within their scope. Standard coil and contact arrangements cover practically any need for control circuit applications or for operating motors, heaters, lights and other small auxiliary equipment. No AC hum.

1- to 3-pole combinations. Coils to 230 V. 60-cycle AC or 125 V. DC. Standard voltages: 6, 12, 24, 115 and 230. Contacts rated 6 amps. @ 115 V. AC or 24 V. DC; 3 amps. @ 230 V. AC or 0.5 amp. @ 115 V. DC. High-current types available up to 15 amps. @ 115 V. AC.

Write for Dunco Data Bulletins 2100, 2103 and 2118.

STRUTHERS-DUNN, Inc.
PITMAN, N. J.
WORLD'S LARGEST ASSORTMENT OF RELAY TYPES

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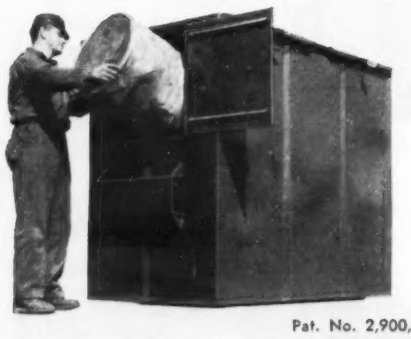
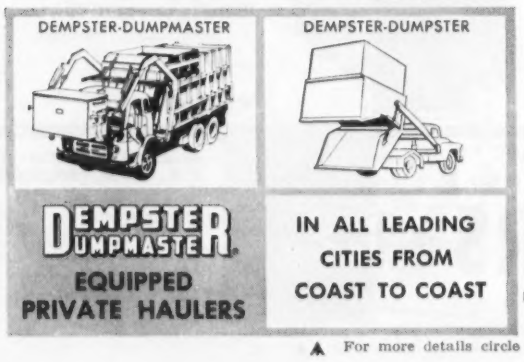
How our small plant solved its waste disposal problem . . . WITHOUT CAPITAL OUTLAY.....



Pat. No. 2,900,096



DEMPSTER-DUMPMASTER Equipped Hauler Provides Containers and Service for Small Fee

Our small Midwestern manufacturing firm did not generate enough refuse to justify ownership of its own refuse disposal system. Yet, it was plagued by unsightly trash piles, fire hazards and scattered refuse in the plant yard.

Our plant engineer then heard of a DEMPSTER-DUMPMASTER equipped private hauler in the adjoining city. A survey revealed that two big-capacity refuse containers, placed one at each end of the plant, would handle the entire refuse accumulation.

The private hauler placed the containers, and a small monthly fee covered maintenance, labor, hauling and dumping refuse. No capital outlay was involved, disposal costs were reduced, and plant housekeeping was vastly improved.

In all major cities, private haulers who own DEMPSTER-DUMPMASTER equipment render fast, efficient, low-cost refuse storage and collection service. They place one or 100 containers at your service for a reasonable fee. A free brochure describes their service in detail.

Free Brochure and Name of Nearest Private Hauler on Request
Dept. NE3 **DEMPSTER BROTHERS** Knoxville 17, Tenn.

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NEW VITON*

*Viton is a trademark of the DuPont Company

RUBBER PARTS BY STALWART

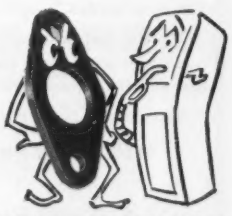
RESIST OILS

Offer the finest fluid resistance of any synthetic rubber now available . . . retain strength and resiliency where ordinary synthetics fail under similar operating conditions.

RESIST CHEMICALS

Provide unsurpassed resistance to a wide range of solvents, acids and bases at accelerated temperatures...maintain their stability when other compounds deteriorate.

RESIST FUELS



Will not shrink or swell when exposed to commercial fuels, fluids and lubricants, including exotic fuels . . . assure dependable performance under severe attack.

8846-SR

RESIST TEMPERATURES

Withstand temperatures up to 450° F. in continuous service ...up to 600° F. in intermittent service . . . have fireproofing qualities equivalent to stainless steel.

SEND TODAY FOR NEW STALWART CATALOG

The world's largest producer of silicone custom rubber parts

STALWART RUBBER COMPANY
151 Northfield Road, Bedford, Ohio

Northfield Road, Bedford, Ohio. Manufacturing facilities in Jasper, Georgia and Bedford, Ohio.

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NEW NEW Cerfa-Kleen

METAL CLEANERS

FOUR, NEW, FASTER, MORE EFFICIENT CLEANERS WITH IMPORTANT EXTRAS!

For power washers, soak tanks, wipe-on or mechanical cleaning processes . . . hot or cold. No matter what method you prefer, one of Houghton's new Cerfa-Kleens will (1) clean faster and better (2) handle easier and safer and (3) give you extra benefits such as built-in rust preventives, water softeners, non-foaming and free-rinsing characteristics when you need them.

Best yet, you don't have to pay for special cleaning formulations. There's a Cerfa-Kleen to handle most any cleaning job in your plant. For details on Cerfa-Kleen (or our full range of industrial metal cleaners) call your Houghton Man today, or write: E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

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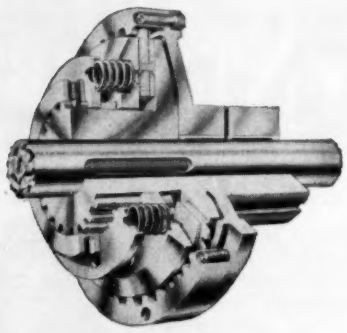
Safely LIMITED Torque will:

- **SAVE YOUR MACHINERY**
- **IMPROVE YOUR PRODUCTION**
- **PROTECT YOUR CAPITAL**



The HILLIARD ADJUSTABLE Slip Clutch

- **PROTECTS against overloads, jams, twisted shafts**
- **RESUMES the drive automatically after overload**
- **ELIMINATES shear pins and lost time**
- **ADJUSTABLE WHILE RUNNING feature is available for constant tension**

HILLIARD slip clutches are continuously protecting the drive on dish washing machines . . . printing presses . . . packaging machines . . . case loaders . . . foundry equipment . . . air filters . . . conveyors . . . overhead doors . . . speed reducers . . . and many others.

They maintain steady torque while permitting speed variations on fabric drying drums, steel strip slitters and similar equipment.

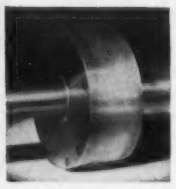
Sizes available from 3 in. lbs. to 25,000 ft. lbs.

Write today for Bulletins 300 and SC2

• OTHER HILLIARD CLUTCHES •

FOR AUTOMATION • INVESTIGATE THESE CLUTCHES

SINGLE REVOLUTION CLUTCHES for automatic accurate control—electrical or mechanical—of intermittent motion, indexing, cycling and cut-off. Ask for Bulletin 239.



OVER-RUNNING CLUTCHES for automatic instantaneous engagement and release on two speed drives, dual drives and ratchet or backstop action. Ask for Bulletin 231.

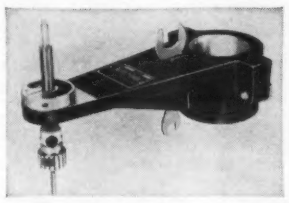
HILLIARD-TWIFLEX CENTRIFUGAL COUPLING for smooth, easy starting of any load automatically with overload protection and ability to accommodate shaft misalignment. Ask for Bulletin CE-3.

THE **HILLIARD CORPORATION**

40 W. FOURTH ST. ELMIRA, NEW YORK

IN CANADA: UPTON - BRADEEN - JAMES LTD. TORONTO • MONTREAL

LEAD SCREW TAPPER fits on drill press column



Holes are precision tapped with this Auto-Tap lead screw tapping attachment. This support arm device mounts on round column drill presses and can be used with any reversing type head to convert drill presses into precision tapping machines. It consists of support arm, clamp, and precision ground lead screw and split nut. Latter two are interchangeable for various thread sizes. • **Ettco Tool & Machine Co.**, 594 Johnson Ave., Brooklyn 37, N. Y.

▲ For more details circle **NED-588 C** on enclosed inquiry slip ▲

NAMEPLATES, DIALS & PANELS anodized, lithographed, or etched

Ansolite — A PRODUCT OF ANDERSON & Sons, Inc. — NAME PLATES - DIALS - PANELS — WESTFIELD, MASS.

Gages from 0.003 to 0.012 in. are available in easily applied, bonded Ansolite nameplates, dials, and panels. They are made of anodized, lithographed, or etched metallized plastic film or metallic foil. Manual application at up to 2000 per hour or automated application is possible. • **Anderson & Sons, Inc.**, Westfield, Mass.

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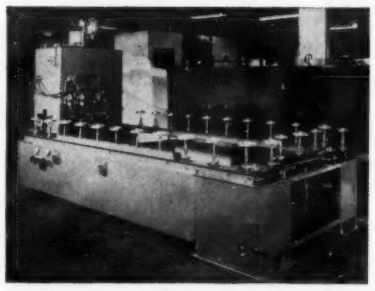
AUTOMATIC SPRAY FINISHER paints conveyed items from above and beneath, continuous or skip



Automatic spray finishing machine which utilizes the chain-on-edge principle will handle spray guns for painting from above and/or beneath the work on a continuous or skip spray arrangement. The conveyorized machine can be equipped with any number of work holders from a minimum of 15, which are supplied on centers to suit size of part, loading, and drying time. Either rigid roller or conveyor chain is employed.

Machine has a variable speed drive on the conveyor and can be equipped with a variable speed drive to revolve the part. An electric safety stop or control button, air filter, and automatic valve lubrication are available to match job requirements. Bake ovens, heat lamps, gas off, and cool-off tunnels can also be furnished. • **Conforming Matrix Corp.**, 338 Toledo Factories Bldg., Toledo 4, Ohio.

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DEPENDABLE MACHINE SUPPORT . . . PRECISION LEVELING

get both with...

EMPCO *leveling jacks*

Solid, easily adjustable foundation for machine tools, large surface plates, automation lines, tool room and production equipment of all types. Easily installed, they increase machine efficiency, reduce downtime and maintenance. Combined with Vi-Sorb Mounting pads, Empco Jacks reduce objectionable vibration to a minimum, retard creepage, often eliminate the need for anchor bolts. Built to take it, Vi-Sorb pads stand up under repeated impact . . . resist oils, greases, acids. Jacks available in 6 styles, 25 models. Pads to fit.

INQUIRE TODAY!

ASK FOR BULLETIN NO. 100

EMPCO LEVELING JACKS

THE ENTERPRISE MACHINE PARTS CORP.

2727 JEROME AVE. • DETROIT 12, MICH.

Manufacturers of Automatic Production Machines, Fixtures, Machine Parts

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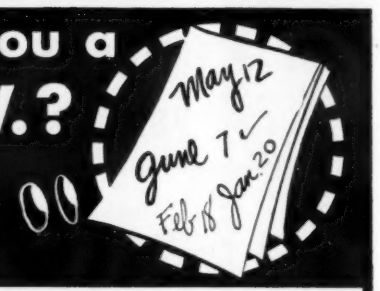
are you a *D.W.?



*D.W.— Date Watcher

If time is an important factor in that rush job, then WLS, through skill and know-how in the specialized technique of SPEEDTOOLING, can usually produce your order in time and within as close tolerances as ordinary methods of stamping.

Further — they can save you up to 87% of former costs!

COMPLETE FACILITIES
- Blanking
- Forming
- Piercing
- Drawing
- Extruding
- Stenciling
- Countersinking
- Plating
- Machining
- Painting
- Grinding
- Welding

FREE

For those manufacturers who are faced with manufacturing problems, we offer a free bulletin illustrating many stampings we have produced, as well as a sample and cost summary of an actual part. We also offer free quotations from your blueprints at any time.

WLS — Will Lead to Savings! STAMPING COMPANY

Charter Member of Small Lot Stamping Institute

3287 E. 80th Street • Cleveland 4, Ohio

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Need a Motoreducer with an unusual drive motor?

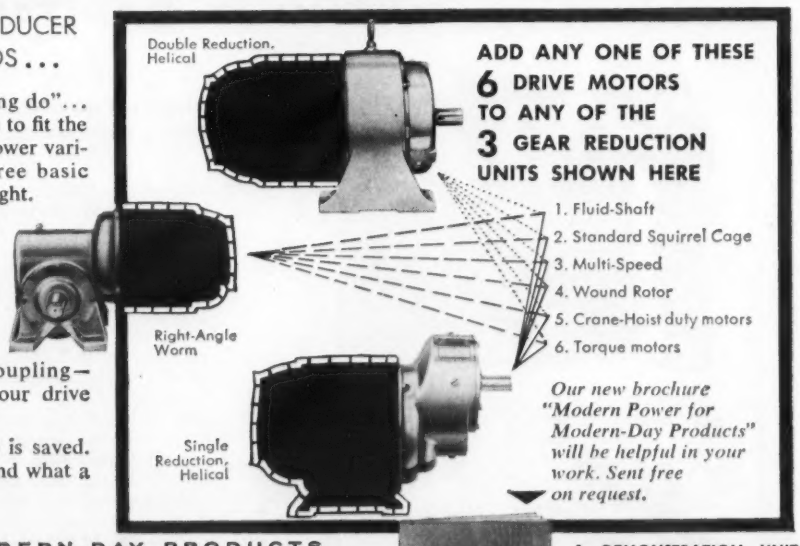
LET REULAND TAILOR A MOTOREDUCER PACKAGE TO YOUR EXACT NEEDS . . .

No longer must you "make something do"... no longer must you modify *your* machine to fit the *drive!* Hundreds of different speed and power variations can be developed from the three basic Reuland gear reduction units shown at right.

This is made possible through the use of Reuland's famous "Xpandable-Design" idea.

Whether you need a simple motor-and-reducer—or an amazing, automatic combination with a special motor, gear reducer, magnetic brake and fluid coupling—Reuland engineers can quickly solve your drive problem.

Costs are lowered. Development time is saved. Your drive is *right*. Why not see first-hand what a Reuland Motoreducer can do for you.



ADD ANY ONE OF THESE 6 DRIVE MOTORS TO ANY OF THE 3 GEAR REDUCTION UNITS SHOWN HERE

1. Fluid-Shaft
2. Standard Squirrel Cage
3. Multi-Speed
4. Wound Rotor
5. Crane-Hoist duty motors
6. Torque motors

Our new brochure "Modern Power for Modern-Day Products" will be helpful in your work. Sent free on request.

MODERN POWER FOR MODERN-DAY PRODUCTS . . . ALL IN LIGHTWEIGHT ALUMINUM FRAMES!

REULAND MOTORS ®

A DEMONSTRATION UNIT FOR YOUR EQUIPMENT?

So sure are we you'll like what you see, we're offering to engineer a demonstration unit for your equipment without the slightest obligation. Just write us.

Refer to Sweet's Product Design File, Section 5a

Reuland Electric Company—Distributors in all principal cities

Western Division: Alhambra, California • **Eastern Division:** Howell, Michigan

▲ For more details circle **NED-591 C** on enclosed inquiry slip ▲

HYDRAULIC
REMOTE CONTROL
SYSTEMS

Completely self-contained . . . single tube . . . remote control eliminates use of compensators. Rugged and reliable . . . used in engine, machine tool and many other factory applications . . . wherever positive, accurate, instant duplication of movement is needed . . . no "sponginess."

EASILY INSTALLED

Sperry CONTROLS
HYDRAULIC REMOTE CONTROLS
Representatives in Principal Cities
SPERRY PRODUCTS, INC. • 1712 SHELTER ROCK RD. • DANBURY, CONN.
▲ For more details circle NED-594 C on enclosed inquiry slip ▲

PURCHASING AGENTS' CHECK LIST FOR INDUSTRIAL SEATING

✓ COMFORT FEATURES TO MINIMIZE FATIGUE, BOOST PRODUCTION
Want to cut energy-robbing fatigue? Look for body-contoured backrest, large comfortable seat, spring steel backrest support that maintains correct firmness and fit for life of chair.

✓ ADJUSTMENT FEATURES FOR EFFICIENCY, VERSATILITY
Fit the chair to the job, and worker output rises! 4-Way adjustable back enables individual to move backrest up, down, backward, forward so it correctly supports small of back. Telescoping legs, adjustable at 1" increments, keep the worker at right height for the bench and job.

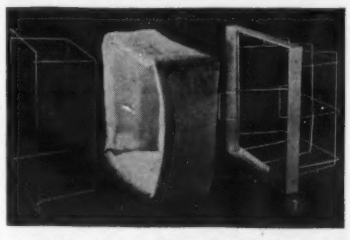
✓ CONSTRUCTION FEATURES FOR LONGER SERVICE, MINIMUM MAINTENANCE
Better-built chairs, require less repair, fewer replacements — give top value over the years. Look for welded tubular-steel frames, pre-shaped masonite seats, non-chipping oven-baked enamel finish — these are signs of good dollar value construction. Steel leg glides prevent gouged floors, no exposed bolts to cause worker injury.

YOU GET THEM ALL IN THE Royal® 515
...AMERICA'S TOP PRODUCTION CHAIR

SEND FOR FREE COMPLETE INDUSTRIAL SEATING CATALOG #7001
Shows dozens of specialized chairs and stools. Explains fatigue-free seating principles, helps choose the right chair for every job.
ROYAL METAL MANUFACTURING CO.
One Park Avenue, New York 16, Dept. 41-C.

▲ For more details circle NED-595 C on enclosed inquiry slip ▲

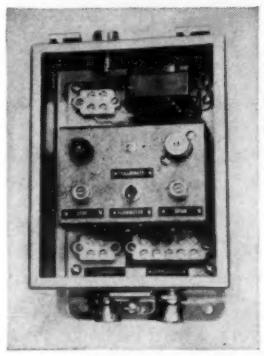
LARGE CAPACITY AIR FILTER
cube type unit has replaceable media



Unique "cube" construction of this Ulok replacement air filter is reported to give up to six times the service life of conventional filters. Lightweight Dynel modacrylic filtering media is 2 in. thick. It is held in basket-like holder with a rustproof wire retainer. All five surfaces of filter are used, affording high capacity. Pressure drop is only 0.04 in. at 2000 cfm. Standard sizes are available with face areas of 20 x 20, 20 x 25, 16 x 20, and 16 x 25 in. and with depths of 8, 11, and 20 in. The area of a bank of conventional filters can be halved by switching to the 8-in. deep units. The moisture-proof filter media "cube" can be collapsed flat for disposal with all dirt in the bag. • **Union Carbide Development Co.**, 30 E. 42nd St., New York 17, N. Y.

▲ For more details circle NED-596 C on enclosed inquiry slip ▲

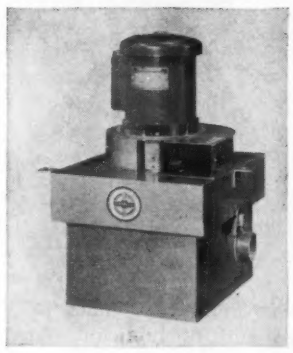
STRAIN GAGE ADAPTER
for easy indicating and recording



All necessary circuitry is included in the SGA-100B strain gage adapter for readout of any strain gage type flow, pressure, weight, or force transducer on self-balancing direct current millivolt potentiometers or recording oscillographs. Device makes possible precision indicating, recording, and controlling with readily available equipment. Excitation of zener regulated bridge supply is adjustable between 2.5 and 10 v dc nominal. Adapter uses 105-125 v, 60 cycles ac and has an output of 0-10 to 0-30 mv dc, depending upon the transducer. Price with an 8 x 6 x 3½-in. water and dusttight case is $125. • **Ramapo Instrument Co.**, 8 First St., Bloomingdale, N. J.

▲ For more details circle NED-597 C on enclosed inquiry slip ▲

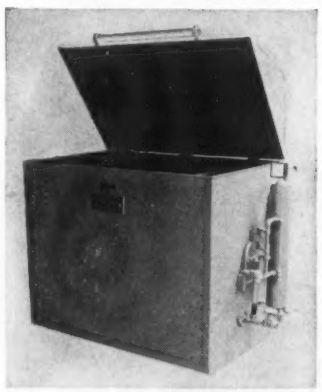
SMALL DUST COLLECTOR
has fireproof, throwaway filter



Because it is only 21½ in. high and fits a 12 x 14-in. floor space, this Model 301 industrial dust collector can be located under benches or out of the way. It can be used for dust control in electronic as well as production and light manufacturing operations. It uses a throwaway, fire resistant, glass filter. The 200-cfm fan develops a velocity of 4100 fpm, static pressure of 1.7 in., and is driven by a ⅓-hp motor. Price is $138. • **Torit Mfg. Co.**, 1133 Rankin St., St. Paul, Minn.

▲ For more details circle NED-598 C on enclosed inquiry slip ▲

CORROSION TEST CABINETS
custom salt fog and humidity type



All components of accelerated corrosion test cabinets are contained in the "packaged" units, available in two standard sizes, plus special and walk-in types. The custom salt fog and humidity test units require no auxiliary apparatus to perform acetic acid, fungus, rain, sunshine, sweat, and Corrodkote tests. Available models have 30 x 18 x 30-in. and 48 x 26 x 36-in. inside dimensions. Viewing windows, liquid level controls, sight ports, recording instruments, and automatic controls for cyclic tests are optional. • **Industrial Filter & Pump Mfg. Co.**, 5900 W. Ogden Ave., Cicero 50, Ill.

▲ For more details circle NED-599 C on enclosed inquiry slip ▲

Why slow up the job with specials?

Design around STANDARDIZED
BOSTON GEARS
— over 2000 types and sizes
CALL YOUR BOSTON Gear DISTRIBUTOR

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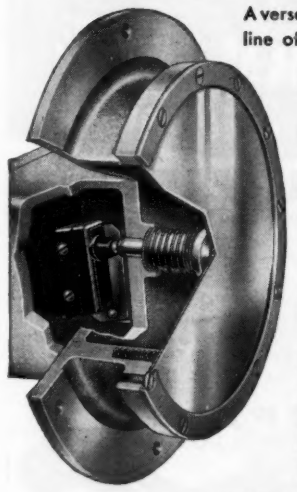
NEW
AUTO-BIN-DICATOR*
AUTOMATIC BIN LEVEL INDICATOR



A versatile addition to the Bin-Dicator line of bulk material level controls.

NEW corrosion-resistant construction
NEW stainless steel diaphragm
NEW super-sensitive operation

Explosion-proof and general purpose models listed by Underwriters' Laboratories, Inc.

Prevents overflowing of bins, clogging of conveyors, choking of elevators, damage to machinery; cuts operating costs. Provides simple, reliable, positive control at low cost.

WRITE for Bulletin AB-19 or call VAlley 2-6952

THE BIN-DICATOR CO.
13946-A Kercheval • Detroit 15, Mich.
*TM PATENT PENDING

WE SELL DIRECT • PHONE ORDERS COLLECT
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IF YOU MIX 2-PART RESINS
GET THIS FREE BOOKLET!

This concise, new booklet tells why Hardman TRIPLEMATIC® Pumps are 3-ways better for metering, mixing, and dispensing 2-part resins:

1 SIMPLIFIED, Maintenance-Free Operation
2 ADAPTABLE to All Applications
3 PRODUCTIVE, Cost-Saving Economies

Write today for your free copy and discover all the features that make TRIPLEMATIC the outstanding performer wherever 2-part resins are used.

H. V. HARDMAN CO., INC.
587 Cortlandt Street, Belleville 9, N. J.

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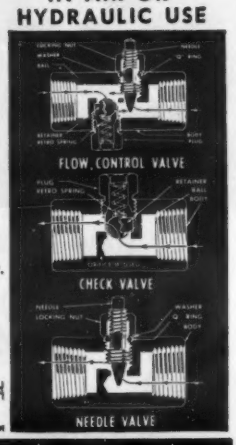
Get Easier, More Accurate Cylinder Speed Control

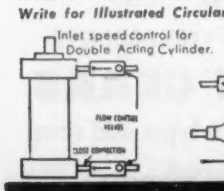
with **Pneu-Trol®** VALVES IN AIR OR HYDRAULIC USE

2,000 (brass or aluminum) and 5,000 (steel) p.s.i.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 5 female pipe sizes — 1/8" to 3/4". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.





AUTO PONENTS INC. 2929 GRANT STREET BELLWOOD (Chicago Suburb) ILLINOIS

▲ For more details circle NED-606 C on enclosed inquiry slip ▲

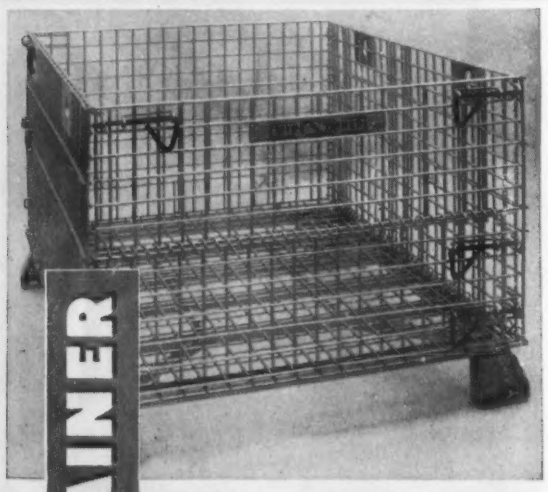
by FAIRFIELD

If you use gears in the products you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of accurate, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities.

FAIRFIELD MANUFACTURING CO., INC.

2335 S. Concord Rd. Lafayette, Indiana

▲ For more details circle NED-607 C on enclosed inquiry slip ▲



WIRE-TAINER

STORING ★ HANDLING ★ SHIPPING

- Virtually indestructible—electro-welded steel rod construction
- Saves money coming and going—easy to lift and stack, folds flat to save on return trips
- One and two-ton capacities
- Side or end openings
- Available with eyes for crane lifting, increased side heights, caster plates and casters, horizontal and vertical dividers

FREE LITERATURE describing all **WIRE-TAINER** advantages. Drop us a line.

SPRINGPORT STEEL PRODUCTS COMPANY
Springport, Michigan

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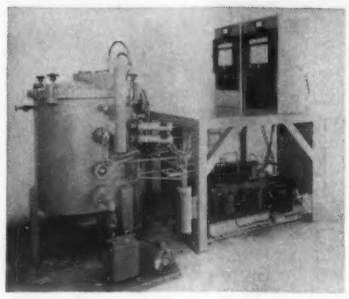
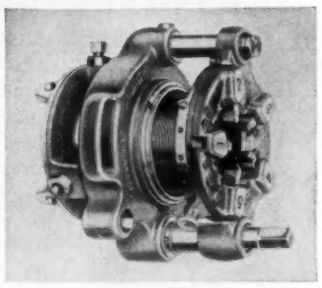
HIGH TEMPERATURE FURNACE
for vacuum or atmosphere operation



Split graphite tube resistor incorporated in this 2600° C furnace operates at partial vacuum or positive pressure in the presence of a nonoxidizing atmosphere. Expanded or finely divided carbon insulation is used, depending upon the application, to minimize power requirements. Relatively inexpensive and durable heating element is economically replaced, as are refractories. Furnace shown has a hot zone of 6 in. ID by 15 in. high. Larger units with hot zones up to 30 in. ID by 48 in. long can be built to order. • **Vacuum Specialties Co.**, 34 Linden St., Somerville 43, Mass.

▲ For more details circle **NED-609 C** on enclosed inquiry slip ▲

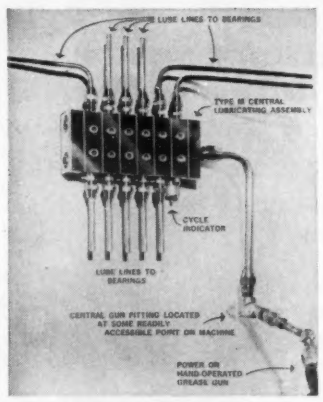
JAMPROOF THREADER
geared unit for 2½ to 4-in. pipe



One set of dies enables the No. 141 jamproof geared threader to thread 2½, 3, 3½, and 4-in. pipe or conduit. It adjusts quickly for straight or tapered, over or undersize threads. Drive pinion "kicks out" automatically to prevent jamming. A cam action workholder is easily set to size by turning an adjusting collar. No. 161 jamproof threader is available for threading 4 to 6-in. pipe without changing dies. • **Ridge Tool Co.**, Box 670, Elyria, Ohio.

▲ For more details circle **NED-610 C** on enclosed inquiry slip ▲

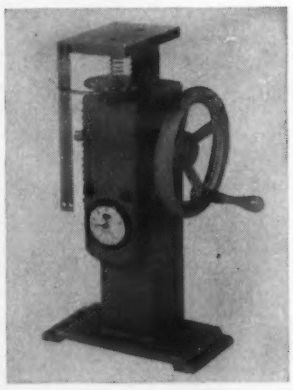
CENTRALIZED GREASE SYSTEM
for lubricating small machines



Up to 16 outlets are handled from a single Type M gun-operated centralized grease system, designed for lubrication of small machines or where space does not permit mounting a manual or automatic pump. Outputs vary from 0.010 to 0.070 cu in. of grease per cycle. A cycle indicator enables the grease gun operator to cycle the assembly the correct number of times to give each bearing its exact amount of lubricant. Any blocked line or bearing stops the cycle and "freezes" the indicator pin. A strainer block prevents grit and dirt from reaching bearings. • **Trabon Engineering Corp.**, 28815 Aurora Rd., Solon, Ohio.

▲ For more details circle **NED-611 C** on enclosed inquiry slip ▲

SPRING TESTER
in capacities from 1 to 25 lb



Both compression and extension springs can be tested by the LST spring tester, available with one to five different gages with capacities ranging from 1 to 25 lb. Accuracy is within one-half graduation. Unit tests extension springs 2½ in. maximum OD by 2 in. extended length and compression springs 1⅞ in. OD by 4¾ in. maximum free length, not less than 3/16 in. ID. Separated from stand, gage becomes a compression and extension tester for measuring force of cable tensions, spring actuated plungers, tensions of working parts of machinery, and material strengths. • **John Chatillon & Sons**, 85 Cliff St., New York 38, N. Y.

▲ For more details circle **NED-612 C** on enclosed inquiry slip ▲

HOW TO USE ROTAC®

RECIPROCATING ROTARY
TORQUE ACTUATORS

Free—New 20-page book EVERYTHING YOU'LL WANT TO KNOW ABOUT ROTAC—How It Works • Control • Applications and Special Uses • Installation Details • Complete Dimensions and Torque Ratings • Helpful Ideas on How You Can Use ROTAC in *Your* Operation.

60-4

XLO
EX-CELL-O FOR PRECISION

EX-CELL-O CORPORATION
GREENVILLE PLANT
GREENVILLE, OHIO

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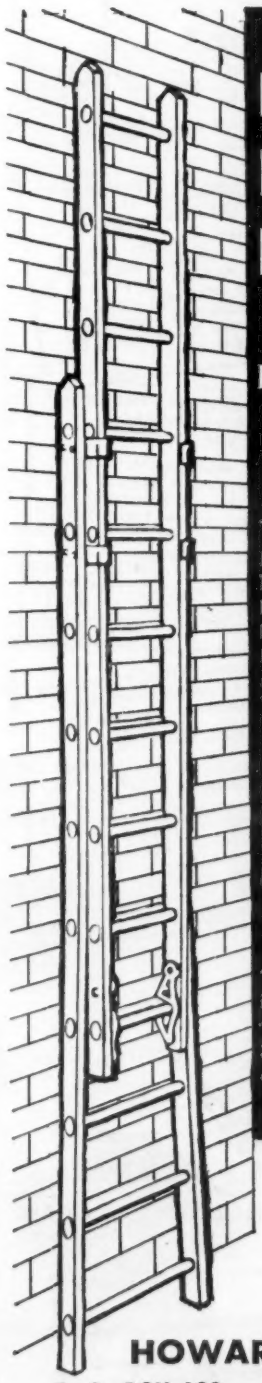

NEW! NEW! NEW!

RICH VICTOR EXTENSION LADDER

A new concept in ladder design

JOB TESTED AND PROVED!

Here is an extension ladder that has received wide acceptance by utilities - industry - painters - builders - wherever extension ladders are used. These features are found ONLY in the Rich Victor Extension Ladder

- Wood rails
- Aluminum Rungs
- Wood parts Preservative Treated Before Assembly
- Will not conduct electricity
- Weighs less than 2 pounds per foot

The only extension ladder of its kind.

Step-Up and get Rich on the entire Rich ladder line.

WRITE FOR COMPLETE CATALOG

HOWARD B. RICH, INC.
P. O. BOX 120 • CARROLLTON, KENTUCKY
The Nation's Leading Ladder Manufacturer

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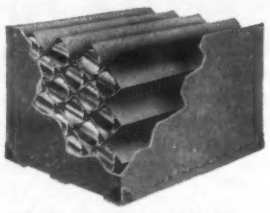
ELIMINATE PARTS DAMAGE, SAVE MATERIALS-HANDLING TIME AND MONEY WITH

SPAULD-PAK

SPAULDING'S UNIQUE NEW IDEA IN DUNNAGE



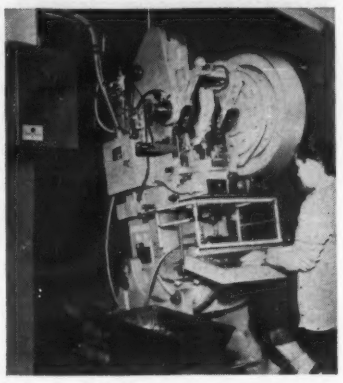
SPAULD-PAK is extra tough Spaulding Vulcanized Fibre formed into lightweight corrugated sheets of spacers for the protection of parts or assemblies during handling and shipping. SPAULD-PAK is low in cost, reusable, grease and oil resistant.

Made in sizes to fit your needs. For more data, write

SPAULDING FIBRE CO., INC.
Materials-Handling Division
Dover, New Hampshire
Branch Factory:
1325 San Julian Street, Los Angeles 15, Calif.

▲ For more details circle NED-615 C on enclosed inquiry slip ▲

PRESS SAFETY CONTROL
operator protected by radio field



Effective protection without contact is assured operators of stamping, pressing, embossing, or cutting presses, eccentric slotters, shears, and other machines by Model 500-1B electronic safety control. Guarding element is a conductive conduit that is easily shaped to boundaries of the restricted area without hindering operations. It is mounted on the machine with insulator blocks and is connected by coaxial cable to a key-locked, gasketed enclosure. Element sets up a radio-like field which, if entered by operator's hand, a tool, or any object, actuates a relay to shut machine off instantly. Operation will not resume until object is removed. • Security Controls, Inc., 503 Franklin St., Buffalo 2, N. Y.

▲ For more details circle NED-618 C on enclosed inquiry slip ▲

IF YOU'RE

Handling Coil

CHECK THESE C-F LIFTER ADVANTAGES

- 1 Lifter handles wide range of coil sizes
- Requires minimum of only 10" to 12" between piles — saves storage room
- 1 man operation — eliminates hookers
- Positive grip on coil — no damage to material

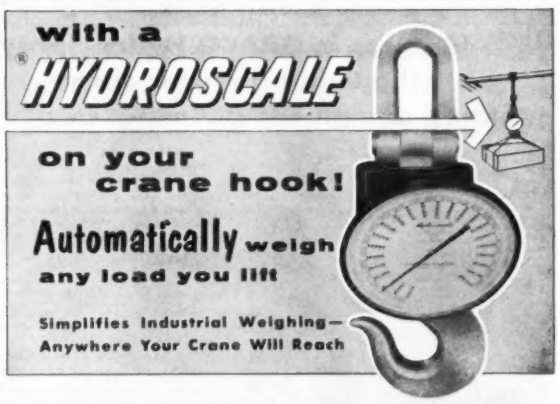
• C-F Coil Lifters are saving time and labor in many plants and warehouses because they can pick up, carry and set down a coil of steel faster and safer than any other method. Infinite jaw openings permit handling a very wide range of coil widths . . . carrying legs open fast, stay open until operator closes them on coil. Narrow legs require minimum space between piles—a space saving advantage. Made in motorized models for crane cab or pendant operation as well as manual types with chain wheel, in capacities from 3 tons up. Powered Rotating Heads available. Opening ranges to suit your requirements.

Write for illustrated Bulletin

CULLEN-FRIESTEDT CO.
1304 South Kilbourn Avenue • Chicago 23, Illinois

▲ For more details circle NED-620 C on enclosed inquiry slip ▲

with a HYDROSCALE



on your crane hook!

Automatically weigh any load you lift

Simplifies Industrial Weighing— Anywhere Your Crane Will Reach

ALL WEIGHING IS DONE ON YOUR CRANE HOOK
ENGINEERED AND BUILT FOR LONG SERVICE-LIFE
THERE ARE 110 MODELS IN THE COMPLETE LINE
TARE ADJUSTING KNOBS FOR NET LOAD READING
EASY-TO-READ DIALS AVAILABLE IN 3 SIZES

HYDROSCALES *guaranteed*

They are guaranteed to be free of defects in workmanship and materials, and to be accurate to ½ of 1% of the maximum dial capacity

HERE ARE SOME TYPICAL WEIGHING APPLICATIONS

Just a few of the many applications include — loading, unloading, check weighing, batching, foundry charging, and protecting your equipment from overloading.

HYDROWAY SCALES, INC.
"The world's largest producer of crane scales"
31288 Stephenson Highway • Royal Oak, Michigan

▲ For more details circle NED-616 C on enclosed inquiry slip ▲

WASTE & TRASH TRAILER
wet or dry refuse compacted into small volume for disposal

Plants generating large quantities of waste, or those with long hauls to refuse disposal areas are potential users of this hydraulic compaction trailer. It com-

pacts industrial waste, trash, and refuse into a fraction of its former volume with its 65,000-lb thrust packing mechanism. Model DB-42 is 34 ft 7 in. long and 10 ft 8 in. high, and holds about 160 cu yd of loose refuse. Larger Model DB-53 holds 210 cu yd in the same length, but is 12 ft 6 in. high.

Compacting mechanism is powered by a single telescopic cylinder on a support platform. Packer head moves the 300-in. length of the body for tight packing and clean discharge when dumping. An 18-gal sump at the front gathers liquids when wet refuse is compacted. Trailer is handled by any standard fifth wheel tractor or used with a tandem tractor. • Dempster Brothers, Inc., Dept. CT-71, 733 Springdale Ave., Knoxville, Tenn.

▲ For more details circle NED-619 C on enclosed inquiry slip ▲

$199.50

NEW 15" KL General IS PERFECT FOR FLOOR AREAS UP TO 5000 SQ. FT.!

Also available: 13" KL — $159.50

Portable! Midweight! Quality-Engineered!

Anyone can buy! Anyone can use . . . anywhere . . . for any job! Featuring many new 30th Anniversary exclusives, including 2-position, pivotal-rigid combination handle.

BEFORE YOU BUY, SEE GENERAL! There's a GENERAL in every price and size range.

General FLOORCRAFT, INC.
3630-50 Rombouts Ave., Bronx 66, N.Y. Established 1930
World's Most Complete Line of Industrial and Household Floor Maintenance Machines and Vacuums
All Sizes for All Types of Floors — Made by Floor Machine and Vacuum Specialists

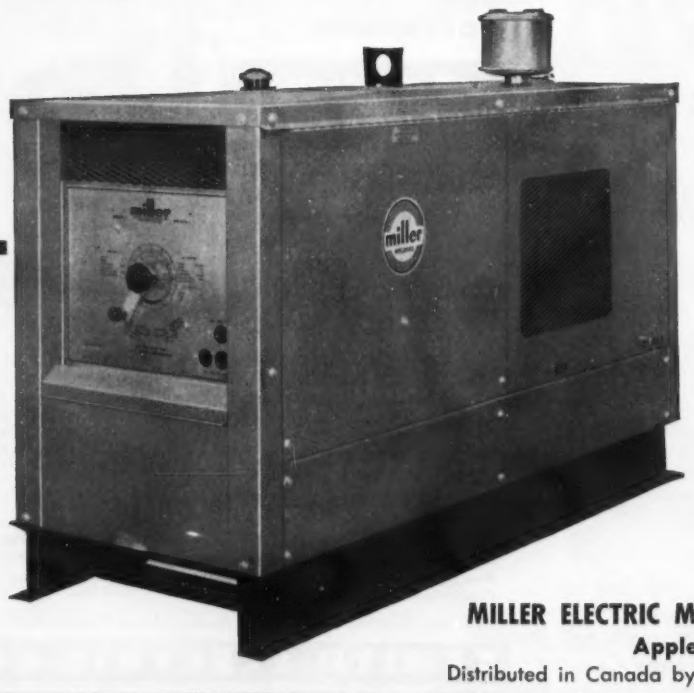
Generals are Feature-Filled! MAIL COUPON for complete details

☐ Have Distributor call on us. NE-3
☐ Send complete information, literature and prices.
☐ Floor and Rug Cleaning Machines ☐ Vacuums
Company ____
Street ____
City ____ State ____
My Name ____ Title ____

▲ For more details circle NED-621 C on enclosed inquiry slip ▲

miller Welder/Power Plant Reliability now available with

Diesel Economy and Safety



Hercules 38 h.p. 3 cylinder direct injection diesel engine drives new Miller DD-250-L d-c welder/a-c power plant, which *delivers:*

- Two d-c welding ranges: 50-200 amperes, 150-350 amperes
- Duty Cycle: 100%
- Rated output: 250 amperes d-c at 40v, 100% duty cycle
- Maximum open circuit voltage: 65
- Current adjustment steps: infinite
- Power: 12 KW, 115/230v single phase, 60 cycle a-c.
  Up to 6.5 KW a-c while welding. 1 KW, 115v auxiliary d-c power while welding.

Complete details and engine specifications will be sent promptly upon request.

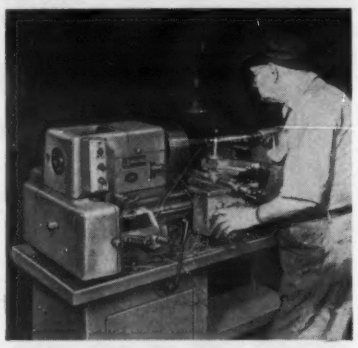
MILLER ELECTRIC MANUFACTURING COMPANY, INC.
Appleton • Wisconsin
Distributed in Canada by Canadian Liquid Air Co., Ltd., Montreal

▲ For more details circle NED-617 C on enclosed inquiry slip ▲

PROOF OF PERFORMANCE

"Clausing 5400-series lathes are dependably accurate—easy to operate—have more stamina than lathes of comparable size. We have 7 and we're sold on them—they're the biggest lathe value we've found."

ALMOR TOOL COMPANY, Detroit, Michigan



"Dependably accurate — have more stamina, CLAUSING 5400-SERIES LATHES are the biggest lathe value we've found"

This reaction to Clausing 5400-series 12¾" lathes is typical of user reports. Here are a few reasons why—

"Dependably accurate"—Spindle turns on Timken "Zero-Precision" tapered roller bearings. Bedways are flame hardened, precision ground. Accuracy is *verified* by test report with each lathe.

"More stamina"—Has massive bed, headstock, apron, tailstock—forged steel spindle—three V-belts driving spindle pulley—heavy-duty variable speed drive or heavy-duty 10-speed countershaft. More *"beef" throughout.*

Get *all* the facts, compare, and you, too, will find Clausing *"the biggest lathe value"! Prices start at only $1120.*

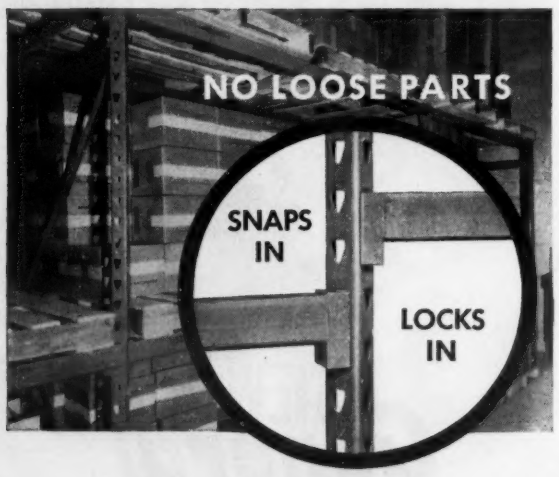
Write for FREE LITERATURE

CLAUSING — CLAUSING DIVISION, ATLAS PRESS COMPANY, 3-113 N. PITCHER ST., Kalamazoo, Mich.

▲ For more details circle NED-626 C on enclosed inquiry slip ▲

FAST!

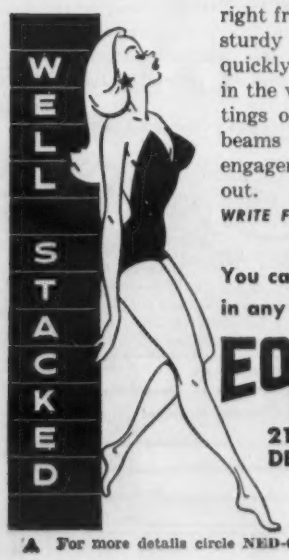
EMI *air-row head* FULLY ADJUSTABLE PALLET RACKS



★ EASY TO ERECT
★ ONLY 2 BASIC PARTS
★ SIMPLE TO ADJUST
★ QUICK TO RELOCATE

EMI AIR-ROW Head Racks easily adjust to stack pallets, skids, dies and bulk of varying heights. Upright frames are tied together with sturdy steel support beams which quickly snap into AIR-ROW slots in the vertical post. Forge lock fittings on the ends of the support beams insure positive self-locking engagement with no sway or pop-out.

WRITE FOR OUR COMPLETE CATALOG!

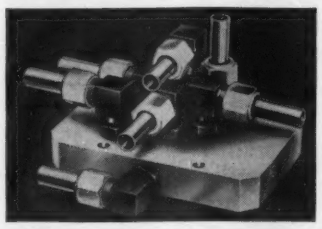


You can stack or ship ANYTHING in any industry on EMI racks

EQUIPMENT MFG. INC.
21566 HOOVER ROAD
DETROIT 5, MICHIGAN

▲ For more details circle NED-627 C on enclosed inquiry slip ▲

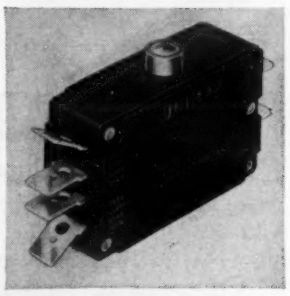
SELF-SEATING FITTING sizes from ½ to 2 in. OD



Hydraulic, pneumatic, lubrication, instrumentation, and other systems are typical applications for the Self-Seat fitting which has a straight thread. It consists of a stem and non-turning body with floating nut, makes a metal-to-metal seal, and requires no swing clearance. Tightening the nut forces the stem to coin its own seat. Only 1-in. center-to-center space is needed for a ½-in. fitting. One-half to 2-in. OD sizes are offered in all conventional shapes. Flodar self-flare fitting or standard no-flare and flare type tube connections are available on the body. • **Flodar Corp.**, 16911 St. Clair Ave., Cleveland 10, Ohio.

▲ For more details circle NED-628 C on enclosed inquiry slip ▲

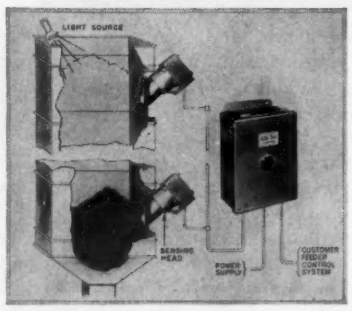
SNAP-ACTING SWITCH two mechanisms in single housing



Flexible, low cost means for controlling electric circuits in automatic devices is provided by Unimax Type DA snap-acting switch. Double-pole double-throw control is provided by two basic switch mechanisms in a single housing, actuated by the same button. Dirt, dust, and moisture resistant unit has quick-connect terminals for snap-on wiring. Besides the pin-actuated model, the 1 13/16 x 41/64 x 1⅛-in. switch can be furnished with leaf, roller leaf, hinged, and overtravel plunger actuators. UL listing is 15 amp, 125/250 v ac. • **W. L. Maxson Corp.**, Unimax Switch Div., Ives Road, Wallingford, Conn.

▲ For more details circle NED-629 C on enclosed inquiry slip ▲

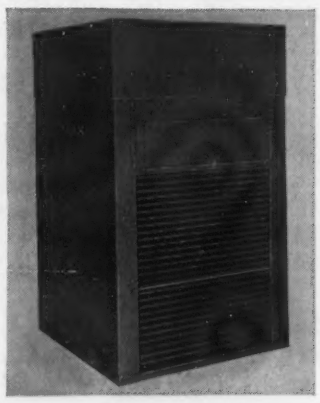
LEVEL INDICATING SYSTEM for opaque and solid materials



Sen-Tek electronic light-sensing level indicating system detects and controls the level of materials in bins, tanks, hoppers, and elevators. Such opaque and solid, conducting or nonconducting materials as sand, powdered coal, carbon, sugar, salt, grain, stone, slag, coal, coke, and ore can be handled. Used as a limit switch, counter, indicating device, or for similar applications, the control is installed with sensing heads at the desired top and bottom levels. A light source is located over the hopper and directed at the heads which energize a relay to start a feeder, or cause an alarm or control valve to operate. A single sensing head installation is used when a "full" or "empty" indication only is required. • **Euclid Electric & Mfg. Co.**, Madison, Ohio.

▲ For more details circle NED-630 C on enclosed inquiry slip ▲

PACKAGED AIR CONDITIONER capacities range to 15.7 tons



Combining an outside heat exhaust section and various inside evaporator sections, air-cooled Champion air conditioners will perform efficiently, even when outside temperatures fall below 60° F. Line includes six outside exhaust sections with capacities from 4.7 to 15.7 tons. Inside coil sections are available in self-standing, ceiling suspended, or direct-to-ductwork styles, as well as a full line of plenum models for elimination of ductwork. Coils can be supplied for direct application in ductwork, using existing blowers and ducts. • **Borg-Warner Corp.**, York Div., Box 1592, York, Pa.

▲ For more details circle NED-631 C on enclosed inquiry slip ▲

115 VOLT AC FROM ANY 12 VOLT DC SOURCE

WEBSTER ELECTRIC POWER CONVERTER

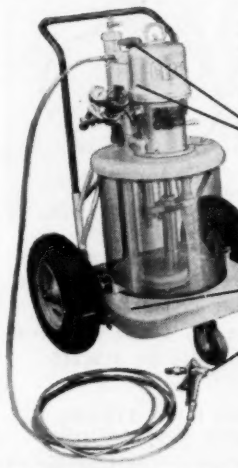
Here is a moderately priced power converter for operating standard tape recorders, phonographs, radios, amplifiers, dictating and other 110 volt equipment from 12 volt power supply. It's fully transistorized — has automatic overload and polarity protection. There are no moving parts, nothing to wear out — minimum servicing and maintenance.

Frequency stability is approximately 3 cycles per volt input variation, providing excellent stability for recording and reproducing, even if standard automotive regulators and charging equipment are in operation. Efficiency is 65 to 72% at ½ to full load. Has provision for remote operation. Universal base provides for either vertical or horizontal mounting. Bulletin ECI-6 gives complete details, write today.

COMPONENTS DIVISION
WEBSTER ELECTRIC
RACINE · WIS

▲ For more details circle NED-632 C on enclosed inquiry slip ▲

New features in GRACO Hydra-Spray puts the leading airless spray painting equipment *Even Farther Ahead!*



AIRLESS GRACO HYDRA-SPRAY has *new advanced features* that put it in a class by itself for low-cost painting . . . *new models* for a broader range of work. It eliminates atomizing air . . . gives faster coverage with less material. Cuts costs of applying protective coatings by 30-70%!

- Your choice of air or hand operated elevator. Lets you change paint pails fast and easy.
- New lightweight surge tank unit with built-in filter (optional). Compact . . . light . . . easy to clean.
- New offset agitator for better mixing, better paint agitation. Automatic, air-driven type.
- All wear parts of pump, manifold and spray gun now made of highest grade hardened parts.
- Pedal operated wheel brakes let you park the unit near the work, even on inclines.
- All new Graco Spray Gun specifically designed for Hydra-Spray. Single hose enters base of handle . . . gives better balance, makes painting easier. New gun filter gives better finish, lets you handle wider range of work.

Now 8 standard models to fit every need! Portable and stationary units that pump direct from 5-10 gal. pails or 55-gal. drums, plus sealed standpipe unit for circulating systems. *Get the details today!*

For nearest GRACO Supplier — SEE the telephone directory YELLOW PAGES — Look under "SPRAYING EQUIPMENT"

GRACO
ENGINEERS AND MANUFACTURERS
GRAY COMPANY, INC.
37 Graco Square
Minneapolis 13, Minnesota

Factory Branches
New York, N. Y.
Philadelphia, Penna.
Detroit, Michigan
Atlanta, Georgia
Chicago, Illinois
Houston, Texas
San Francisco, Cal.
Sales Office
Toronto

▲ For more details circle NED-633 C on enclosed inquiry slip ▲

completely automates intermittent operations

ZENITH Multi-Operation TIME SWITCH

AS MANY AS 48 "ON" AND 48 "OFF" OPERATIONS CAN BE HANDLED. The Zenith Multi-Operation Time Switch provides 24-hour automatic control of all types of equipment day after day. Schedule is set up on an easy-to-operate control dial scaled to 15-minute calibrations. Tripping clips are non-removable but easily slide to the ON or OFF position. Calendar cutout to provide for non-working days is available as an accessory.

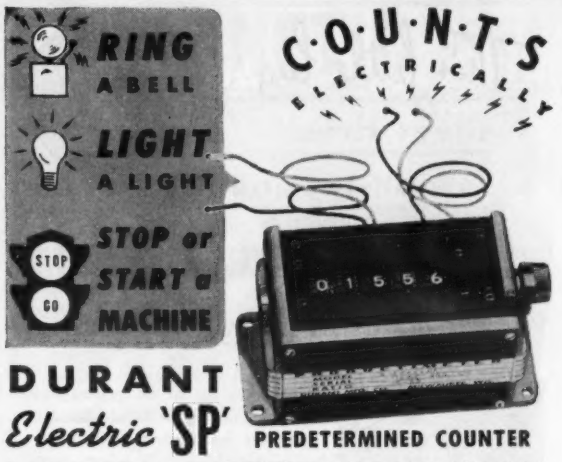
Switch is powered by a heavy duty synchronous industrial motor. Rated at 1000 w., 60 cycle ac.

ASK FOR FULL INFORMATION. Request complete catalog on company letterhead describing Zenith Automatic Transfer and Remote Control Switches, Magnetic Contactors, Program Clocks and Timing Controls.

See Classified Directory for Name of Local Distributor

ZENITH ELECTRIC CO.
169 WEST WALTON STREET • CHICAGO 10, ILLINOIS

▲ For more details circle NED-634 C on enclosed inquiry slip ▲



DURANT
Electric **'SP'** PREDETERMINED COUNTER

(COUNTS ELECTRICALLY and CLOSES SWITCH AT END OF PRE-SET COUNT)
Eliminates costly over-runs or time consuming under-runs. Actuated by Photo Electric Cell, Tube, Relay, or Contact Switch. Counter can be located where desired. Predetermined count may be set at any figure to 99,999. Hundreds of applications in all phases of production and instrument work.

SMALL • COMPACT • RUGGED • FAST • ACCURATE

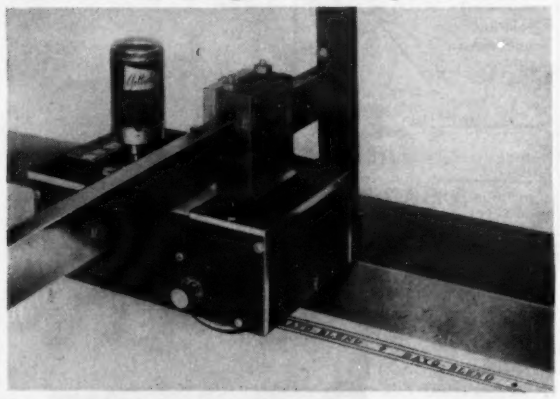
Send for Catalog No. 56

DURANT MANUFACTURING CO.
1922 N. Buffum St. Milwaukee 1, Wis.
22 Thurbers Ave. Providence 5, R. I.
Representatives in Principal Cities

PRODUCTIMETERS SINCE 1879 *Count Everything*

▲ For more details circle NED-635 C on enclosed inquiry slip ▲

New Midget Imprinter



For any material processed in roll, sheet or strip form

• Saves cost and time of separate printing operation • Compact—occupies less than 1 cu. ft. • Lightweight—less than 5 lbs. • Fully automatic—requires no adjusting • Unique instant-dry inking system—ink won't dry in fountain or on rollers • Prints repeat legends up to 4" wide and 12" long . . . or continuous designs • Works on paper, textiles, plastics, laminates, metal, etc.

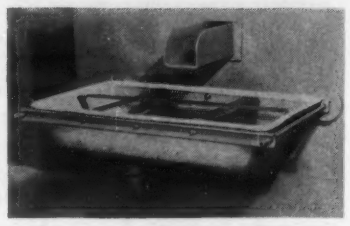
First and foremost in automatic production-line CODING, MARKING and IMPRINTING machines — Gottscho®

Write for details on Model 780 Rolaprinter®
GOTTSCHO Dept. N
HILLSIDE 5, N. J.

In Canada: Richardson Agencies, Ltd. • Toronto & Montreal

▲ For more details circle NED-636 C on enclosed inquiry slip ▲

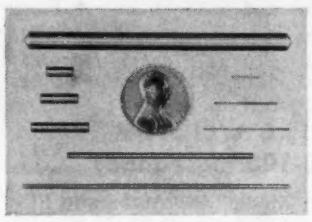
COOLANT CLEANER
removes ferrous, other contaminants



Magnetic and non-magnetic materials as well as abrasive grit, dust, and dirt are removed from coolants by the Filtray. This coolant cleaner is applicable to grinders, screw machines, and many other machine tools. Three perforated metal screens support the readily replaced disposable filter paper away from the reinforced glass fiber tray. A 1-in. drain connection in the bottom is optional. Price, including a month's supply of coarse and medium fabric, is $64.50. • Kebby Co., 2320 Custer Ave., Rockford, Ill.

▲ For more details circle NED-638 C on enclosed inquiry slip ▲

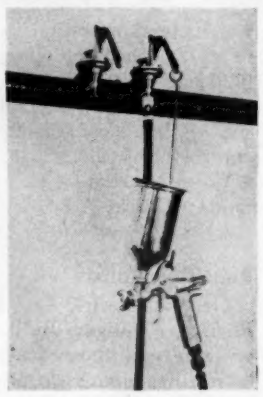
HARDENED & GROUND BLANKS
for gages, reamers, and drills



Hardened and tempered wear - resistant M-2 high speed steel is used in these gage, reamer, and drill blanks in standard and special lengths up to 6 in. Drill blanks have tolerances of +0.0000 in. and −0.0005 in., while gage and reamer blanks have a +0.0002-in., −0.0000-in. tolerances. Diameters range from 0.006 to 1 in. in increments of 0.001 in. Blanks are used as dowel pins, rollers, gages, punches, shafts, kick-out pins, and special tool blanks. • Ohio Drill & Tool Co., Box 146-N, Homeworth, Ohio.

▲ For more details circle NED-639 C on enclosed inquiry slip ▲

QUICK-CLOSING VALVE
stops pipe line flow instantly

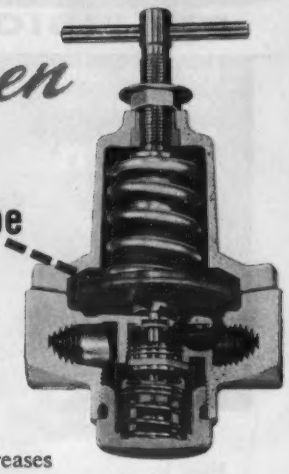


Rapid stopping of the flow of gases and liquids in pipe lines is the function of this instantaneous - acting stop valve. The compact, leak-proof unit may be used for air, various gases, oils, gasoline, water, and other liquids up to 158° F which will not harm the Buna N diaphragm. Valve is normally operated by hand, but is offered with a foot attachment. Mounting can be in any position. The stocked unit is made of cast bronze with a ¾-in. inlet and ½-in. outlet. Pressure rating is 375 psi. • Milo Mfg. Co., 259 N. Broad St., Elizabeth, N. J.

▲ For more details circle NED 640 C on enclosed inquiry slip ▲

All pressure regulators are not alike.

Norgren



Baffle and Siphon Tube Construction

provides more uniform regulated pressure as flow demand changes

This Norgren feature increases the sensitivity of the valve to changes in the flow rate through the regulator and provides better performance and a more uniform regulated pressure over a wide range of flow rates.

Write factory for descriptive literature

C. A. NORGREN CO. FOUNDED IN 1926
3405 SOUTH ELATI STREET • ENGLEWOOD, COLORADO

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IT'S A FACT YOU CAN DO BETTER WITH

DE-STA-CO

TOGGLE CLAMP DELIVERY

BECAUSE, with stocking Distributors from coast-to-coast, you can always get quick delivery of the right clamps for the work at hand . . . RIGHT WHEN YOU NEED THEM!

Whatever the size or shape of the piece to be held—wherever you have to push, pull or lock with forces from 50 to 10,000 pounds—it's a hundred-to-one there's a DE-STA-CO Toggle Clamp in stock to fit the job exactly.

FOR YOUR NEARBY DISTRIBUTOR CONSULT YOUR YELLOW PAGES!

FOR MORE FACTS
WRITE FOR TEMPLATE SET AND CLAMP CATALOG

YOU CAN DEPEND ON DE-STA-CO

DETROIT STAMPING COMPANY
350 MIDLAND AVENUE
DETROIT 3, MICHIGAN
DE-STA-CO

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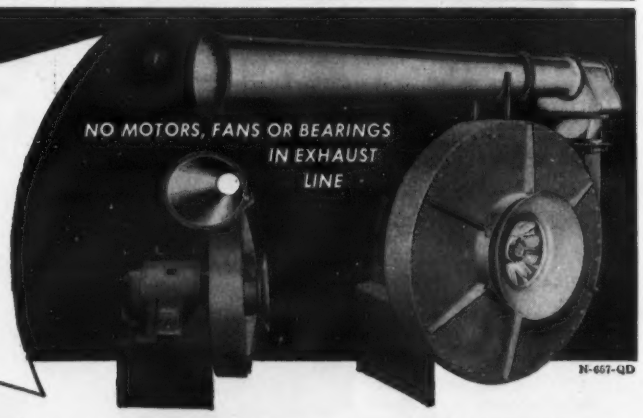
Now . . .
you can reduce bulk materials handling costs with *Quickdraft* high pressure exhausters



FOR MOVING:
Cement, Sand, Iron Oxide, Wheat, Corn, Salt, Limestone, Castor Beans, Knots, Blocks, Paper, Wool, Cotton, Oats, Rags, Rubber, Vegetables, Coal (Powdered), Shavings, Cork, Sawdust . . . and any other materials that can be moved by air!

IMPORTANT NOTICE
For resisting abrasive action, Quickdraft units can be rubber lined. For withstanding corrosive gases, all Quickdraft units are available in standard acid resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (PVC), and with plastic and Fiberglas coatings.

Time and maintenance savings usually pay for Quickdraft high-pressure exhausters in 6 to 18 months on materials handling jobs. Because material does not pass through blower, maintenance is negligible. Downtime for cleaning and replacing fans, motors and bearings is eliminated. Quickdraft units are also ideal for exhausting paint spray, abrasives, corrosive gases, noxious fumes and high temperatures. For Quickdraft engineering data on materials handling, industrial exhausting, heating plant venting, write today!

Patent Nos. 2,722,372 and 2,855,874.
Other Patents Pending.
Covered By Exclusive Foreign Patents.

TYPICAL EXAMPLE: Ideal for moving trim from paper, cellophane and plastic slitting machines. (Models range from 4 in. to 30 in. diameter — with 1/6 to 600 H.P. motors — with negative static pressures from 1/4 in. to 60 in. W.G.)

Quickdraft corporation
P.O. Box 87-L • Canton 1, Ohio

Well known for power draft units for all types of heating plants.

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A BATCH A MINUTE!

PRECISION MIXING

Used by industries the world over to mix and/or blend a complete batch of dry, free-flowing ingredients in one-minute cycles. Exclusive design prevents material separation or particle breakdown regardless of densities. Fast loading, unloading. Easy to clean.

CAPACITIES: 5 qts. to 160 cu. ft. Hand and motor driven models. All sizes available in stainless steel, other alloys.

Daffin MANUFACTURING COMPANY
INDUSTRIAL DIVISION
3954 NORTH PRINCE STREET • LANCASTER, PA.

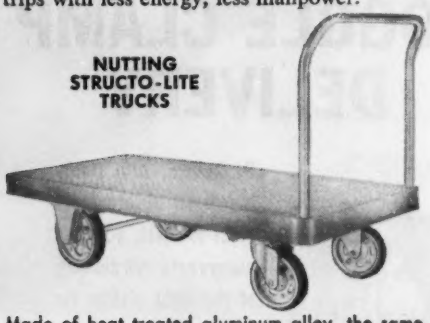
▲ For more details circle **NED-643 C** on enclosed inquiry slip ▲

Built for rugged service... **2 NEW**

lightweight floor trucks

Here are 2 new trucks that feature corrosion-free properties plus strength without weight . . . up to 40% lighter than steel. This permits use in almost any industry plus larger loads and more trips with less energy, less manpower.

NUTTING STRUCTO-LITE TRUCKS



Made of heat treated aluminum alloy, the same type used for heavy duty structures . . . non-sparking for safety where explosive material is used, non-toxic and resistant to attack by food and unaffected by most chemicals, and many acids and alkalies. Exclusive Nutting unitized frame construction holds proper alignment throughout unusual loads and abuse. New 3 bearing "friction-free" casters for easiest possible maneuvering.

NUTTING FIBERGLASS BOX TRUCKS

Weigh as little as 70 lbs. (steel trucks of the same size 120 lbs.!). Chrome impregnated fiberglass is impervious to steam, oil and mild acids and alkalies — won't crack or corrode — withstands temperatures from —40°F to 212°F, even up to 250°F for short exposures. Smooth inside with rounded corners for easy cleaning.

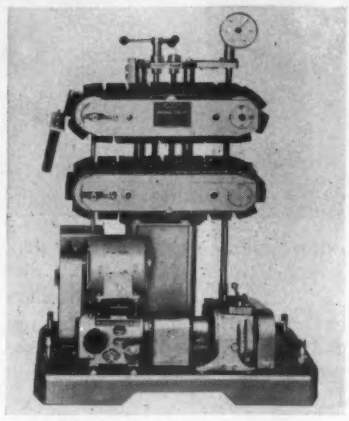
These light, but extra rugged trucks are designed to increase your handling efficiency and to save you money — based on lighter weight, longer life, reduced maintenance and less downtime.

FOR COMPLETE PRODUCT LITERATURE WRITE OR CALL TODAY

Nutting TRUCK AND CASTER CO.
482 DIVISION STREET
FARIBAULT, MINNESOTA

▲ For more details circle **NED-644 C** on enclosed inquiry slip ▲

EXTRUSION TAKE-OFF MACHINE
belts have wide-area nonslip grip

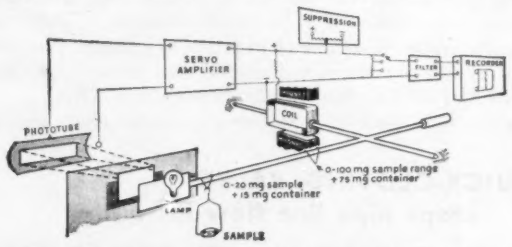


Resilient pads on two belts running at identical speeds have contact pressure so light that this Type C universal take-off machine does not distort extruded tube or other profiles being handled. It has a nonslip grip over a wide area of contact and is suited for handling any rigid, brittle, or flexible material. It has casters for portability and a hydraulic drive which varies speeds from 0 to 500 fpm. An optional electronic drive permits rapid change from constant speed to constant tension. Two models handle extrusion diameters from 0 to 8 in. and 0 to 16 in. ● **Farris Universal Machine Corp.**, 551 Commercial Ave., Palisades Park, N. J.

▲ For more details circle **NED-645 C** on enclosed inquiry slip ▲

AUTOMATIC SAMPLE WEIGHER
has 0-20 and 0-100 mg ranges

To weigh a sample with Model RM Automatic Electrobalance, it is simply placed on the balance pan. Instrument generates a voltage proportional to the



weight for application to a voltmeter, digital voltmeter, or chart recorder calibrated in milligrams. Unit has 0-20 and 0-100 mg ranges with respective sensitivities of 0.002 and 0.01 mg. Balancing time is less than 0.1 sec. Balance consists of cable-connected weighing and control units which can be located to suit application. ● **Cahn Instrument Co.**, 14511 Paramount Blvd., Paramount, Calif.

▲ For more details circle **NED-646 C** on enclosed inquiry slip ▲

Rectifier Bulbs

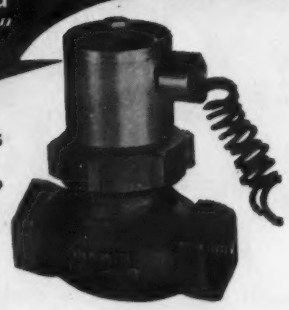
General Electric Co., Electronic Components Div.—Revised "Tungar Bulb Data Manual" features descriptive and theoretical data on use of Tungar bulbs in rectifier circuits to provide noise-free power supplies with low voltage drop and high efficiency. Ten types of bulbs described in the 8-page Manual ETR-2091 will handle from 20 amp at 25 v to 6 amp at 250 v.

▲ For more details circle **NED-647 C** on enclosed inquiry slip ▲

TYPE M

Solenoid Valves

"We've actually improved quality and radically lowered prices. Compare!"



TYPICAL USER NET PRICES F.O.B. FACTORY

SIZE	1 to 5	100 to 499
½"	$15.40	$11.15
¾"	18.50	13.60
1"	24.25	18.50
1½"	48.00	42.40

PRESSURES TO 400 psi

Packless • 2-Way • General Service • Normally Closed

Sizes ⅜" to 3" • Temperatures to 250° • Molded epoxy resin waterproof coils • Unbreakable piston rings • Self-cleaning • Guided valve seats • Simple, rugged construction. Only 2 moving parts • No diaphragms or linkages • Cushioned closing. No damaging hammer • Easy-off "O" ring bonnet construction in sizes ⅜" thru ¾" • High temperature coils and explosion proof housings at slight extra cost. Immediate delivery. Ask for Bulletin 600-M.

J. D. GOULD CO. • 4707 MASSACHUSETTS AVE.
INDIANAPOLIS 18, IND.

GOULD SOLENOID VALVES VELVETROL

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This little lug → **saves time on-the-job**

BAL TOTE BOXES

Don't Jam When Nested

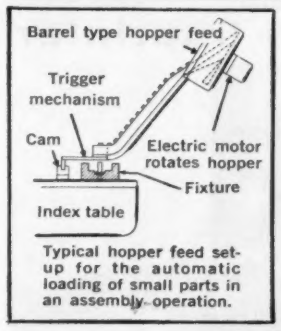
That metal lug on the tapered sides does it—won't permit Tote Boxes to jam no matter how hard they're slammed together. It speeds materials handling!

You get other benefits, too, from Bal's construction: lightweight, hard vulcanized Aerofibre; strong riveting throughout; and rust-protected reinforcements where they're needed. Results? . . . long-time satisfaction.

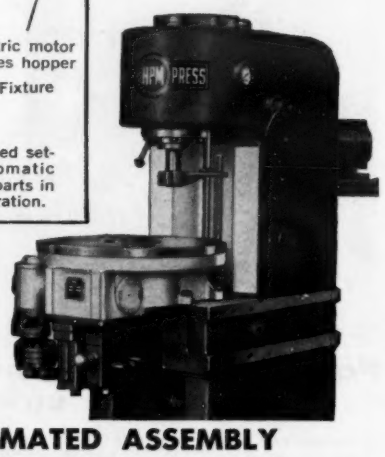
Write for complete catalog

SINCE 1898 william BAL corporation 947-49 Newark Ave. Elizabeth, N. J.

▲ For more details circle **NED-649 C** on enclosed inquiry slip ▲



Typical hopper feed set-up for the automatic loading of small parts in an assembly operation.



AUTOMATED ASSEMBLY FOR LESS THAN $10,000.

► THE FORMULA: H-P-M C-Press, hydraulic index table and automatic part loading accessories. The 5-ton C-Press and index table unit offers unlimited possibilities for low cost automation when appropriately tooled. And it is not limited to single-job usefulness. Use its full potential for small part assembly, staking, crimping, forming, trimming and many other operations. 5, 10 and 15 ton models. Index tables for all C-Presses. Write for complete catalog information. HPM

THE HYDRAULIC PRESS MFG. COMPANY
A Division of Koehring Company, Mount Gilead, Ohio, U.S.A.

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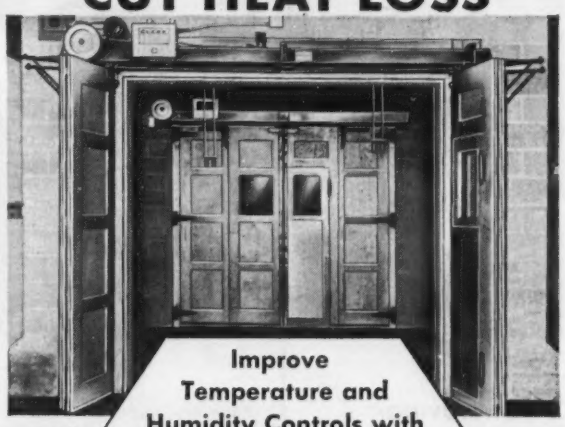
CUT HEAT LOSS



Improve Temperature and Humidity Controls with PREST-O-MATIC® Doors

Prest-O-Matics eliminate drastic temperature changes and drafts 2 ways:
• By reducing open-door time. Open-Close cycle is completed automatically in 6 seconds.
• By sealing out leaks. Engineered to snug-fit your doorways, Prest-O-Matics remain tightly closed when not in use. Flexible Neoprene Seals minimize heat or air-conditioning loss.

Add the man hours these doors save by speeding traffic and you'll see why **so many** blue chip companies insist on Prest-O-Matics. Complete in one easy-to-install unit. No extras.

Available with your choice of AIR OR ELECTRIC MOTIVE POWER. Before you buy **any** door, write for Free catalog.

CLARK DOOR COMPANY, INC. (since 1878) 511 Hunterdon St., Newark 8, N. J.

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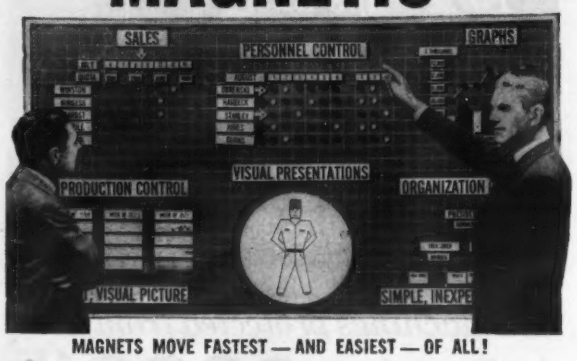
VISUAL **MAGNETIC** CONTROL



MAGNETS MOVE FASTEST — AND EASIEST — OF ALL!

SIMPLEST VISUAL SYSTEM FOR
- Production
- Personnel
- Sales
- Maintenance
- Scheduling
- Machine Loading
- Charts—Graphs
- Visual Presentations

COLORFUL MAGNETIC ELEMENTS
- show facts instantly
- organize for action
- eliminate mistakes
- get the job done

PRICED FROM $38 INCLUDING MAGNETIC ELEMENTS

PRICE LIST & BROCHURE NE3 FREE ON REQUEST

REPRESENTATION DESIRED IN SOME AREAS

Methods Research Corp.

105 Willow Ave., Staten Island 5, New York

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PULL
LIFT
LOWER
WITH THE CADILLAC
WINCH HOIST

This lever-actuated winch hoist has been use-tested since 1952. It's SAFE! It withstands 50% overload! *Every* hoist is pre-tested to full capacity before it leaves the factory. It is easy to handle because it is made of light weight aluminum alloy with stainless steel shafts and springs. Aircraft cable assembly is replaceable without dismantling. Snap-on reversible handle speeds operation. Distributors in all major cities. Capacities 1000 lbs. to 4000 lbs. Price is $29.50 up.

Full year guarantee against defective workmanship and materials.

ALUMINUM PRODUCTS, INC.

698 S.W. 2nd AVE. ESTABLISHED 1943 FT. LAUDERDALE, FLORIDA

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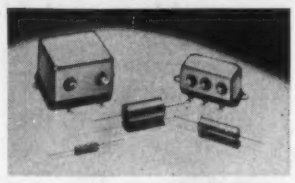
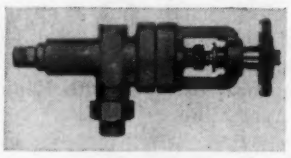
MYLAR CAPACITORS
operate in −90 to 125° C range



Self-healing characteristics of these metallized Mylar capacitors greatly extend their useful life by eliminating weak dielectric areas. Available in bathtub type AB and metal tubular type AM, capacitors meet and exceed Military specifications. Applications include computer circuits, audio coupling, tuned filters, energy storage, oscillator circuits, power supply filter, power factor correction, arc and spark suppression, and audio and RF bypass. Small size units operate and store in a −90 to 125° C range and have capacitance tolerances of 1, 2, 5, 10, and 20 per cent. • **Plastic Capacitors, Inc.**, 2620 N. Clybourn Ave., Chicago 14, Ill.

▲ For more details circle NED-655 C on enclosed inquiry slip ▲

ANGLE VALVE
freezing and galling eliminated



All-purpose angle valve No. 74 serves as a basic liquid level gage valve. With special pipe plug having an integral bleed fitting, it becomes an instrument piping valve. It combines advantages of a single-piece forged valve body and bonnet flange to which is mounted an outside screw and yoke bolted bonnet and a new reciprocating backseating stem. Threaded portion of stem is outside the valve body and is not affected by liquid being handled or freezing. Valve is ASA rated 1440 psi at 100° F. • **Jerguson Gage & Valve Co.**, 80 Adams St., Burlington, Mass.

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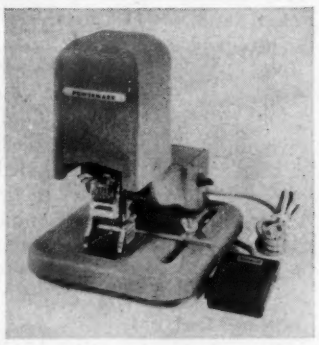
ELECTRIC NUMBERING MACHINE
number repeats until it is changed



Made specifically for numbering carbon interleaved forms, the Powermark II electric numbering machine can be adapted for coding shop tickets, file cards or file folders, and small flat cartons. It adjusts automatically for 1 to 16 carbon copies and is available in 6 to 10-wheel capacities. Wheel numbers will repeat until changed by pressing levers. Unit is available with foot switch instead of base trip Micro Switch, with letter wheels in place of figure wheels, and with special mounting for right or left hand printing. Prices range from $240 to $300. • **Pryor Marking Products**, 434 S. Wabash Ave., Chicago 5, Ill.

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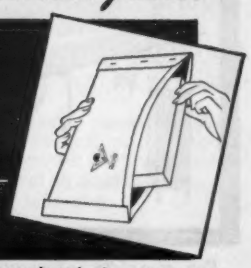
Z-I-P!

IT'S OPEN IN A JIFFY!

JIFFY PADDED SHIPPING BAGS
Completely Redesigned!



★ Tear Tape Opener—
★ Golden Clupak* Outer Liner—
★ New Bag Construction—
★ NO PRICE INCREASE!

Write for your free sample today!

JIFFY MANUFACTURING COMPANY
360 FLORENCE AVENUE, HILLSIDE, N. J.

*Clupak, Inc.'s trademark for stretchable paper.

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NEW DU PONT ADIPRENE® MEANS LONGER LIFE FOR INDUSTRIAL WHEELS

Du Pont synthetic rubber research now brings you ADIPRENE L . . . a new urethane elastomer for longer lasting, better performing industrial wheels of all types.

NEW WHEELS OUTLAST RUBBER 5 TO 1

Wheels made from ADIPRENE L carry a far heavier load than conventional rubber wheels . . . yet they are resilient, won't mark or damage floors. They resist oils, mild chemicals, weathering, aging, high and low temperatures.

Most important, ADIPRENE L actually multiplies wheel life because of its outstanding resistance to wear and abuse. Four- and fivefold increases are common. In one plant, where rubber lasted only a few days, ADIPRENE L wheels were in good condition after *six months!*

Send the coupon for information about industrial wheels made from this new Du Pont elastomer.

E. I. du Pont de Nemours & Co. (Inc.)
Elastomer Chemicals Department NED-3
Wilmington 98, Delaware

☐ I would like to know more about ADIPRENE L industrial wheels. Please send literature and list of manufacturers.
☐ I am particularly interested in the following types of wheels _____
☐ Other information _____
Name _____
Firm _____
Address _____
City _____ State _____

DU PONT SYNTHETIC RUBBER
NEOPRENE HYPALON® VITON® ADIPRENE®

Better Things for Better Living . . . *through Chemistry*

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Gives You MORE, Costs You LESS Check all the FEATURES!*

- ★ **ALUMINUM** construction . . . rustproof . . . corrosion-resistant. Eliminates need for expensive, heavy structural design in filter bank construction.
- ★ **EASY TO HANDLE** Light-weight permits carrying, washing and installing of many more filters per hour.
- ★ **EASY TO CLEAN** Lint and dirt are easily flushed off with water because of water soluble Super Filter Coat (the adhesive with the built-in detergent).
- ★ **DEPTH LOADING** Designed to minimize surface loading, with depth loading accomplished through successive layers of slit and expanded aluminum, and varying baffle sizes.
- ★ **REMOVES ODORS** Revolutionary R P Super Filter Coat adhesive adds odor removal to the normal dirt-trapping properties of R P Industrial Air Filters—with no increase in resistance—at *no* extra cost!
- ★ **GERMICIDAL** Super Filter Coat adhesive contains Hexachlorophene, the well-known bacteria destroying agent.
- ★ **LOWER RESISTANCE** Unique baffle design permits maximum air passage . . . more uniform dust collection within the filter depth.
- ★ **HIGHER EFFICIENCY** Scientifically staggered pattern of flat baffles sets up a controlled turbulence that centrifuges dust and odor particles onto the adhesive for maximum efficiency.

RP® Listed

Multi-Velocity INDUSTRIAL AIR FILTER
FOR HEATING OR AIR CONDITIONING

RP / *Products of Research*

for information, write . . . **RESEARCH PRODUCTS** *Corporation* Dept. 445, Madison 1, Wis.

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2 practical solutions to overcrowded eating conditions

SICO'S 2800 TABLE

The most versatile equipment for multi-use-of-space. Convert a seat with backrest to a cafeteria table with the flick of a wrist—an entire auditorium or meeting hall to a lunchroom in minutes. To clear the area, fold the tables and roll them away. "2800" nests for storage in a small area.

SICO'S L-B TABLE

Practical wherever multi-use of space is needed—whether for an entire lunchroom or for a departmental table. Roll it in when you need it—out when you don't. The "L-B" sets up in just 3 seconds—folds and stores in a minimum area. Built to take abuse—guaranteed for 10 years.

For complete information on these and other SICO Tables for industry, write:

SICO MANUFACTURING COMPANY, INC.
6215 Eden Ave. So., Minneapolis 24, Minn., Dept. 1103

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NEW NAME-STIK

BRILLIANT FOIL PRESSURE SENSITIVE NAMEPLATES PRODUCED ON METAL

—for use on metal, ceramics, plastics, glass, wood—in fact on almost every smooth surface.

Low Cost Solution to your Nameplate Problem

NAME-STIKS are as attractive in appearance as metal nameplates, and their pressure-sensitive backing makes them so much simpler and faster to apply.

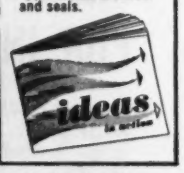
- NO BOLTS • NO SCREWS
- NO MOISTENING OR HEATING!
- NO SOLVENTS OR PREPARATION!

Just peel 'n press—and NAME-STIKS are on to stay! And *you* save two ways. They cost less *per unit*, and cost less *to apply*. Let us show you how NAME-STIKS can fit into *your* production picture. Free sketches—samples—quotations are all part of our service.

WRITE TODAY

For complete data and samples. Also get FREE copy of 48-page full color "IDEAS IN ACTION," crammed with illustrations and case histories—newest data on unusual applications of labels and seals.

allen hollander company, inc.
385 Gerard Avenue, New York 51, N. Y.



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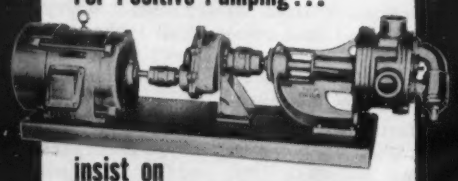
For Positive Pumping...



insist on

VIKING ROTARY PUMPS

In your own best interests, insist upon Vikings, the **POSITIVE DISPLACEMENT** pumps. Using them, you can eliminate slow priming, vapor locks, spasmodic delivery and partial emptying of tanks. Units feature the new helical gear drive and are equipped with heavy-duty pumps which deliver from 17 to 164 gallons per minute.

Five interchangeable speed reducers permit easy change of pump speeds for handling thick or thin liquids. Maximum pressure is 200 PSI on lubricating liquids, 100 PSI on non-lubricating liquids.

For complete information, send for catalog CG, pages 27-28.

VIKING PUMP COMPANY
Cedar Falls, Iowa, U.S.A.
In Canada, It's "ROTO-KING" Pumps
See Our Catalog In Sweet's Plant Engineers File

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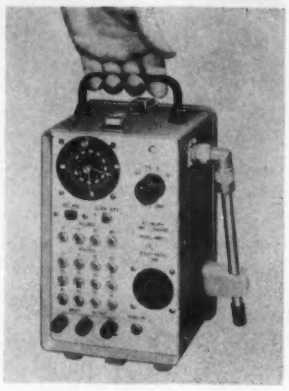
SECONDARY TIME STANDARD precisely controls instruments and is a portable time source



Accurate within ±16 sec per year, this portable, self-powered secondary time standard is used for precisely timed on-off control of recording instruments, telemetering transmitters, and other remotely located equipment. The 7 x 11 x 7-in. transistorized device weighs 9 lb with batteries. Its transistor radio receives National Bureau of Standard radio station WWV and other accurate sources of "seconds tick." An integral decoder filters out all information except the 1-sec "tick" which, through a pulse generator, synchronizes the direct current operated clock.

Contacts utilizing the clock hands and a circuit board provide a variety of switching functions at 15, 30, 45, or 60-sec intervals, and also at 5, 10, 15, and other 5-minute intervals up to 1 hr. • **Zenith Radio Corp.**, 6001 W. Dickens Ave., Chicago 39, Ill.

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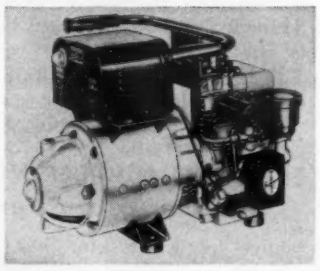
PORTABLE GENERATOR SETS feature automatic idling control



The Econ-o-mizer idling control featured by three 3600-rpm portable gasoline electric plants allows plant to idle until a load of 100 w or more is applied, at which time it revs up to operating speed and voltage. When load is removed, units drop back to idling speed. Three models, weighing 112, 173, and 221 lb respectively, are rated 1500, 2500, and 3500 w. Standard equipment includes stop switch, pilot light, vibration dampers, rope or recoil starter, two 15-amp grounded receptacles, one 30-amp three-wire twist lock receptacle (2500 and 3500-w models), and carrying handle or dolly. • **Winpower Mfg. Co.**, Box 711, Newton, Iowa.

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Milling Cutters

Aber Engineering Works, Inc.—Curved tooth design milling cutters provide a shearing action, and bring about rapid, easy cutting and long tool life, according to 16-page illustrated bulletin. Technical data on various types of cutters, plus prices and descriptive data, are included.

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Now . . . SELF-PROPELLED

NEW... **Weld-Bilt POWER-BOY VERTI-LIFT**

"Weld-Bilt" PRODUCTS

For Power-Driven Handling at TODAY'S LOWEST INVESTMENT

"Double-Powered," with push-button *portability* plus *lifting*, new POWER-BOY brings power-handling equipment within the budget of every plant, every department. Electric motor operated through smooth fluid drive clutch, V-belted to "floating" rubber tired drive wheel, it moves and lifts a capacity load easily, quickly, effortlessly. Features push button forward and reverse, safety braking, 180° steering, separate battery, built-in charger. Available in standard, hinged, telescopic HY-BOY VERTI-LIFTS from 60" to 112". Write for the complete POWER-BOY facts now.

WEST BEND EQUIPMENT CORP.
MATERIALS HANDLING ENGINEERS
311 Water Street, West Bend, Wisconsin

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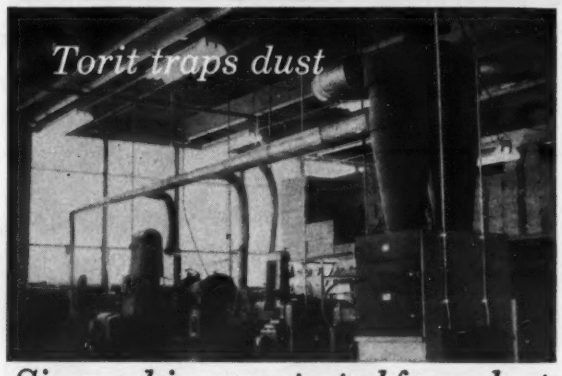

Six machines protected from dust by Torit for $666.15

This Torit Dust Collector, Model 219FM, complete with accessories, was installed by the Mohr Lino Saw Co., Skokie, Ill., to protect 3 belt sanders and 3 other grinders (2 grinders hidden from view) from destructive dust—at a total cost of just $666.15!

After one year's operation, Mohr Lino Saw says this about their *low-cost* Torit installation: "The Torit installation has kept our shop *cleaner*, our operators *happy*, and *protected vital* machinery."

You too can achieve greater machine protection and cleaner working conditions by trapping dangerous or valuable dust *at its source* with a completely *self contained* and *portable* Torit Dust Collector. For full details write to:

TORIT MANUFACTURING CO.
Dept. 203; 1133 Rankin Street, St. Paul 16, Minnesota

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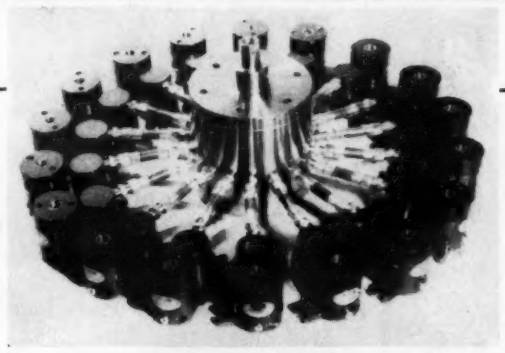

REDMER

AIR CHUCK and ROTARY VALVE for FAST, MULTIPLE PRODUCTION

Redmer #000 Air Chuck mounts on all standard makes of rotary tables 16" in diameter or over. Can be used on tables 24" or over with standard REDMER chucks for greater holding power. Safely holds round, square or hex pieces. Using standard B & S Type collets eliminates fixture making.

Rotary valve available with required number of outlets and necessary off and on positions. Manufactured to specifications only as to diameter, height required and number of outlets.

Send for complete details, price list and complete catalog of all REDMER chucks.

REDMER AIR DEVICES INC.
P. O. Box 12229-7100—30th Ave., North
St. Petersburg 33, Florida

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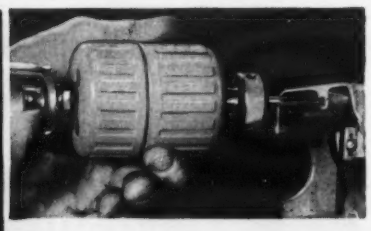
New tool makes tapping as simple as drilling a hole!



Tapping used to be considered one of the toughest shop jobs. It was done with expensive tools by mechanics of great skill.

Now—with a *Push-Pull Tapper* it can be done by anyone—expertly—safely. All you need is the Push-Pull Tapper, a portable electric drill and the taps you would ordinarily use. The big advantage of the Push-Pull is CONTROL. Start it, stop it, reverse it without turning off the power. Use it anywhere, for any hole up to 5/16" diameter. Cost—just $29.95.

To see the Push-Pull Tapper demonstrated, circle number on postcard. Supreme's distributor will bring one over.

Supreme Push-Pull® Tapper
BY THE MAKER OF SUPREME BRAND CHUCKS
2222 South Calumet Ave., Chicago 16 • Div. A-S-R Products

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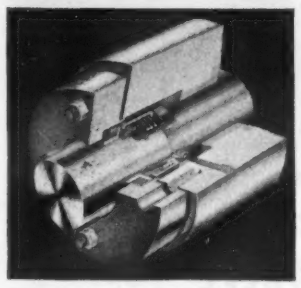
Engineered **MECHANICAL SEALS**



Garlock PK MECHANIPAK* Package Seals offer an easy solution to leak-free sealing . . . *Easy to install* —no parts to "put together." Rotating portion simply slides onto shaft; stationary portion positions quickly into counterbore of gland. Once installed no further adjustment is necessary. No parts of the seal move on the shaft or sleeve, eliminating wear on shaft. Sizes for shafts ⅜" to 3" . . . temperatures to 350° F, 150 psi pressures, 2000 fpm shaft speeds.

For more information, contact your local Garlock representative at the nearest of our 26 sales offices and warehouses throughout the U.S. and Canada. Or, write for Catalog AD-150, The Garlock Packing Company, Palmyra, New York.

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GARLOCK

Canadian Division: The Garlock Packing Company of Canada, Ltd.

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Order from the Garlock 2,000 . . . two thousand different styles of Packings, Gaskets, Seals, Molded and Extruded Rubber, Plastic Products

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Convenient, too!

THE MODERN CONTAINER WITH BUILT-IN APPLICATOR TOP

SPREADS EASILY, QUICKLY, WITHOUT DRYING . . .

STAYS IN PLACE UNTIL ASSEMBLY.

Leak Lock . . .

the joint sealer to use with CONFIDENCE!

Use Leak Lock on threads, flange surfaces. It works where other joint compounds fail . . . will NOT heat spontaneously . . . withstands solvents that eat away other "sealers" . . . stays flexible, withstands shocks, prevents joint freezing. Sold in 4-oz. can—1½ oz. squeeze tubes—pint and 10-lb. containers. Write today for:

FREE SAMPLE TUBE

Listed by Underwriters' Laboratories for gas, oil, propane and butane equipment.

HIGHSIDE CHEMICALS INCORPORATED
14 COLFAX AVENUE • CLIFTON, NEW JERSEY

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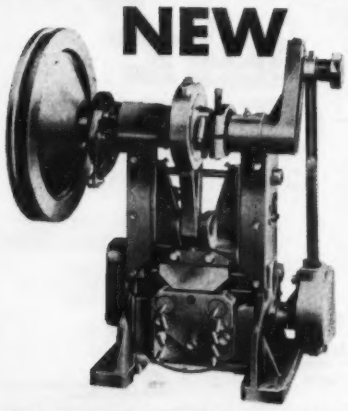
HOBBS *Introduces* NEW JACO Tube Cutter



Cuts any resilient tubing without "witness" marks

With this new cutter — only one of its kind — you cut any rubber or synthetic tubing up to ½" O.D. without leaving witness mark or ridge on the tube end. Eliminate marks that cannot be eliminated by any other power cutter.

Only the new Jaco Cutter supports the outside diameter of the tube while the cut is made. In regular production, you can accurately measure tube lengths up to 80,000" long and cut off two lengths per stroke at rates up to 240 pieces per minute.

Send for details now — revolutionize your tube cutting.

HOBBS Manufacturing Company
EST. 1883
41C Salisbury St., Worcester 3, Mass.
Offices and Representatives in Irvington, N. J.; Chicago, Ill.; Cleveland, Ohio; Greenville, S. C.; Louisville, Ky.; Los Angeles, Calif.; Toronto, Ont. and other major cities.

SBS-8

WINDERS & STANDS • POWER & HAND SHEARS • SLITTERS • DIE PRESSES

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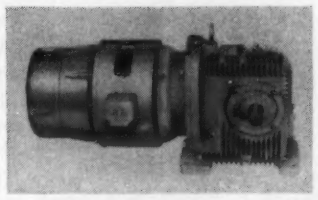
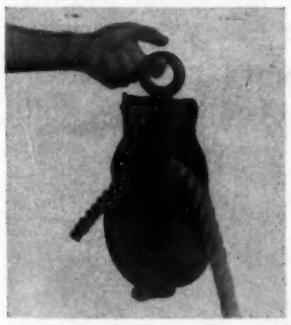
SPEED REDUCERS
motorized double-enveloping type



Full depth contact of worm and gear teeth and a high number of teeth in mesh provide double-enveloping Motoreducers with almost 100 per cent more load carrying contact area than previous models. Ratings range from ½ to 15 hp. Speed reduction ratings from rated motor speeds are 525 to 7.3 rpm. All-position mounting of feet, hollow shaft, or flange types is offered. Various drive motors, including fluid shaft, slip ring, torque, and multispeed, and magnetic brakes, can be combined into tailored units. • **Reuland Electric Co.**, Mission & Fremont, Alhambra, Calif.

▲ For more details circle NED-673 C on enclosed inquiry slip ▲

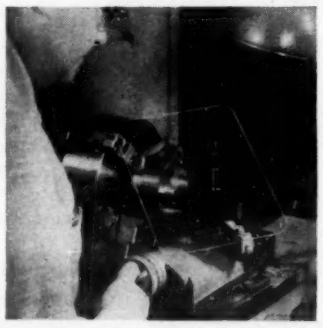
LIGHTWEIGHT BLOCK
for synthetic fiber or manila rope



Tapered roller bearings, wide flange sheave, and wide throat housing are features of the 8-in. Durolite block for use with 1-in. Dacron, nylon, manila, and polyethylene rope. It is furnished with a rope bearing swivel eye, pin bearing swivel eye, or swivel hook. One of the throat pins may be replaced with a toggle eye bolt for quick gate opening. Weight is 27 lb. • **Sauerman Bros., Inc.**, Dept. NDC, 620 S. 28th Ave., Bellwood, Ill.

▲ For more details circle NED-674 C on enclosed inquiry slip ▲

CHIP SHIELD
larger magnetic base offered



Improved Plexiglas Grip-Shield for deflecting flying chips, dust, and splash emanating from a machining operation is now also offered with a giant magnetic base. Comprising three Alnico magnetic cores, the giant base is recommended for the larger 12 x 16 and 16 x 20-in. panels, or for smaller 6 x 8, 8 x 10, and 10 x 12-in. panels which must be held to rough, curved, thin, or vibrating metal surfaces. Plastic panel can be swiveled to suit application. • **Dilley Mfg. Co.**, 1645 Doan Ave., Cleveland 12, Ohio.

▲ For more details circle NED-675 C on enclosed inquiry slip ▲

Get the Latest Data on **DARNELL CASTERS & WHEELS**

wherever the need . . . whatever the size . . .

If you want maximum floor protection, economy and efficiency Demand Darnell Dependability . . .

YOUR DISTRIBUTOR CAN HELP YOU — CALL HIM

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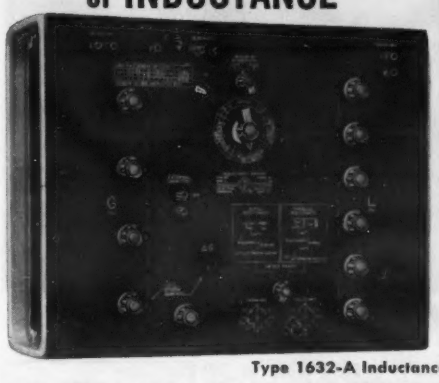
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

Look in the **YELLOW PAGES**

▲ For more details circle NED-676 C on enclosed inquiry slip ▲

For PRECISE Measurements of INDUCTANCE



You Need This NEW G-R Bridge

Type 1632-A Inductance Bridge: $875

WIDE RANGE: 0.0001 μh to 1,111 h
HIGH ACCURACY: Basic for Inductance is ±0.1%
NO SLIDING BALANCE
IN-LINE READOUT: Range switch locates decimal point; identifies unit of measurement.
HIGH RESOLUTION: Six significant figures
MEASURES: Parallel or series L over midrange; parallel L for high Q inductors; series L when Q is low.
DIRECT-READING: In conductance and inductance

Write for Complete Information

GENERAL RADIO COMPANY
WEST CONCORD, MASSACHUSETTS

Broad Avenue at Linden, Ridgefield, N. J. **NEW YORK AREA** 1000 N. Seward St. **LOS ANGELES 38** 8055 13th St., Silver Spring, Md. **WASHINGTON, D. C.** 1150 York Road, Abington, Pa. **PHILADELPHIA** 1186 Los Altos Ave., Los Altos, Calif. **SAN FRANCISCO** 6605 W. North Ave., Oak Park, Ill **CHICAGO** In **CANADA:** 99 Floral Parkway, **TORONTO 15**

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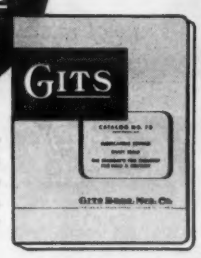
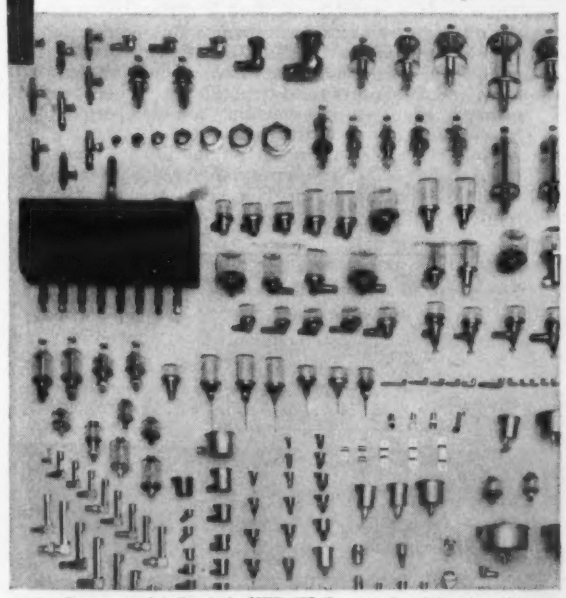
523 GITS OILERS AND GAUGES READY TO SHIP



Largest selection available anywhere. You save time and money, because the one you want is always right in stock. Send for complete Catalog.

GITS BROS. MFG. CO.
1833 S. Kilbourn Ave. Chicago 23, Ill.

Specialists in Lubricating Devices and Shaft Seals for Almost Half-A-Century



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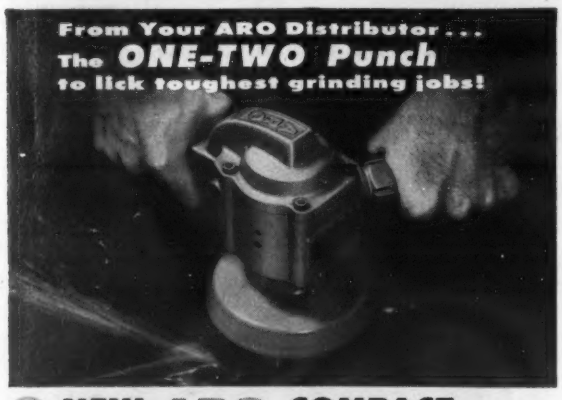


1 NEW ARO COMPACT
8300 SERIES VERTICAL GRINDERS

They're plenty long on muscle and hustle . . . to make short work of toughest grinding jobs. They weigh in at only seven pounds—handle with ease—maintain accurate speed from start to finish. Features: unitized motor, safety throttle, low-level noise. Solid ARO quality. Team ARO 8300's with quality abrasives to cut grinding costs. Both are available from your ARO Distributor. Ask him about job-testing an ARO 8300 soon!

- Compact, powerful.
- 4500, 6000, 8000 r.p.m.
- Weighs only 7 lbs.
- Maintain accurate speed.
- Use with up to 6" wheels.

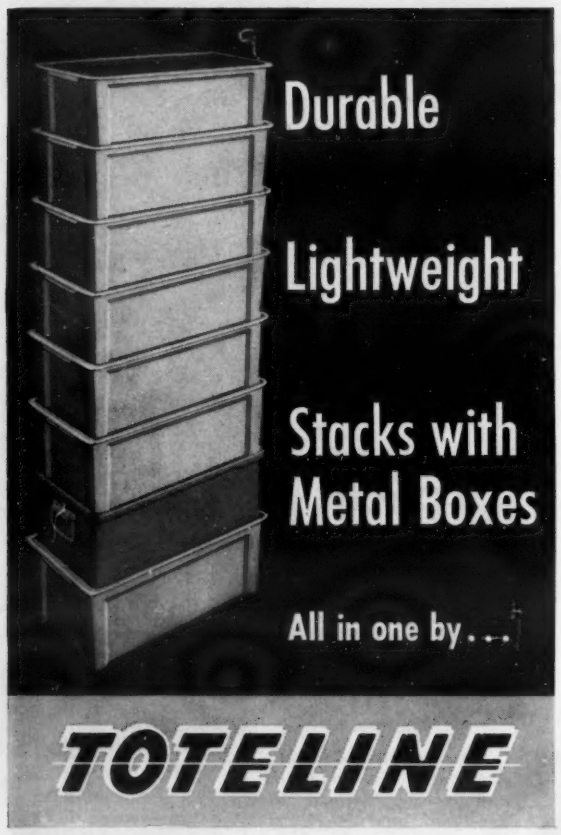
2 THE RIGHT ABRASIVE WHEELS

Your ARO Distributor has a complete selection of standard cup wheels, depressed-center wheels and sanding discs to give you peak efficiency with the new ARO 8300 grinders. Call him today!

THE ARO EQUIPMENT CORPORATION, Bryan, Ohio
Aro of California, 3141 S. Grand Ave., Los Angeles 7, Calif.; Aro Equipment of Canada, Ltd., Rexdale (Toronto), Ontario. Offices in All Principal Cities

ARO® AIR TOOLS
Also Air Hoists, Automation Tools

▲ For more details circle NED-679 C on enclosed inquiry slip ▲



Now . . . a sturdy tote box of strong-as-steel molded fiber glass which stacks interchangeably with your present metal boxes of the popular 10 by 20 by 8-inch size.

You can benefit from the advantages of durable molded fiber glass immediately by introducing Toteline Model 538-1 into your present system. Then replace metal boxes with Toteline boxes as the metal boxes need replacement.

Toteline boxes last indefinitely without maintenance. They are immune to rust . . . you can't dent them and they never need straightening. There are no sharp edges . . . just smoothly rounded corners. Model 538-1 cleans easily with hot water.

Molded handles are a part of the integral, one-piece stacking lip. Steel wire, completely concealed within the edges of the box, add strength and rigidity.

For further information and descriptive catalog, just cut out this coupon and clip to your letterhead. Please furnish your name and title.

NAME _____

TITLE _____ MF-10-A-NED

MOLDED FIBER GLASS TRAY CO.
LINESVILLE, PA.
Chosen to Represent the U.S. Reinforced Plastics Industry at the 1959 International Trade Fair, in Zagreb, Yugoslavia

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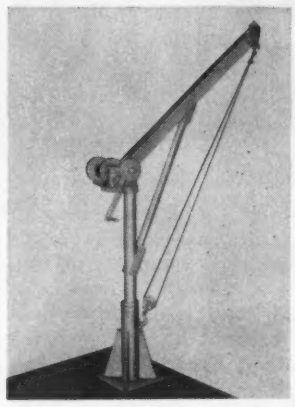
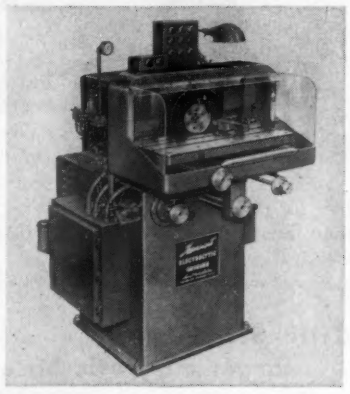
TRUCK & DOCK CRANE
maximum capacity is 1500 lb



One man operating the Model H-550B truck and dock crane can safely lift, lower, and position heavy or awkward loads. When mounted on a truck, its boom folds down out of the way for low clearance areas. Crane has lifting capacity of 1500 lb with its boom retracted to 39 in. Extended to 54 in., the capacity is 1000 lb. Power is furnished by a double-gear hand winch. Lifting height is 7½ ft with boom extended. Crane has a roller bearing at top of base and a ball thrust bearing at the bottom. Winch has 19 ft of ¼-in. wire rope. • **Thern Machine Co.**, 3760 W. Fourth St., Winona, Minn.

▲ For more details circle NED-681 C on enclosed inquiry slip ▲

ELECTROLYTIC GRINDER
has larger wheel and table



Improved Model EG - 10 oscillating electrolytic grinder has a larger wheel and a table measuring 12 x 29 in. to accommodate large workpieces. This increases the carbide tool grinding capacity of the machine which is powered by a 2-hp, 220/440-v or 550-v three - phase motor. Spindle speed is 2150 rpm. Table can be tilted from 10 degrees above to 20 degrees below horizontal. Table in-feed and stock removal are controlled by micrometer screw calibrated to 0.001 in. Spindle carries a 10-in. wheel and oscillates 0 to 100 times per minute with stroke length variable from 0 to 1½ in. • **Hammond Machinery Builders, Inc.**, 1623 Douglas Ave., Kalamazoo, Mich.

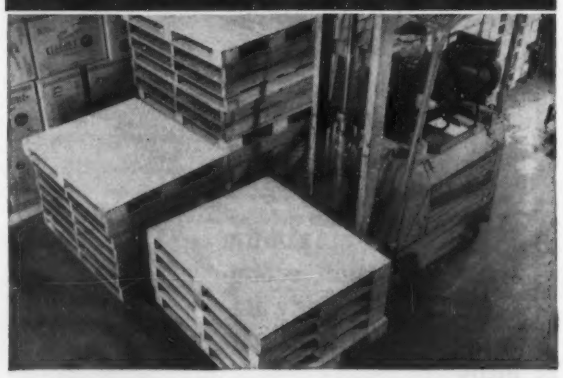
▲ For more details circle NED-682 C on enclosed inquiry slip ▲

Technical Motion Picture Films

Specialized motion pictures about new products, industrial processes, and cost-saving techniques are listed in revised 16-page "Business & Professional Film Catalog." The 16-mm sound films are available on free loan to technical groups, universities, and business and professional audiences. Write to Modern Talking Picture Service, Inc., 3 E. 54th St., New York 22, N. Y.

▲ For more details circle NED-683 C on enclosed inquiry slip ▲

CUT COSTS with FIR PLYWOOD



Plywood pallets last longer for West Coast Grocery Co. The big Tacoma, Wash. wholesaler switched from 1x6 boards to ⅝" fir plywood five years ago. Glue-nailed plywood pallets last many times as long as boards, and frequent repairs and replacements aren't needed. Easily damaged merchandise is given maximum protection because nails can't work loose and the smooth plywood surface is split-proof and splinter-free.

Only plywood with DFPA grade-trademarks is made and tested under industry-wide Douglas Fir Plywood Association quality control program. Look for letters DFPA on the panel.

DFPA TESTED QUALITY

Write for New File Folder Catalog

DOUGLAS FIR PLYWOOD ASSOC., DEPT. 181, TACOMA 2, WASH.

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Brand New!

CLAYTON MARK
full opening
UNION CHECK VALVE

Ideal for liquid process lines . . . new CM Swing Check Valve with *full opening* poppet permits full flow, even passes "Go-Devil". Has bronze disc, malleable body, steel union ends, removable stem. Size 2".

Feature for feature . . .
CM Unions are Superior!

CLAYTON MARK & CO.
1900 Dempster Street, Evanston, Ill

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VALUABLE GUIDE

selects the right lock washer every time

get your copy today!

Shows why Shakeproof® Lock Washers lock tight . . . *stay* tight! Describes complete line and illustrates types and sizes for every need. Contains helpful data on applications and ordering. Write for your free copy now.

SHAKEPROOF
"FASTENING HEADQUARTERS"®
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois

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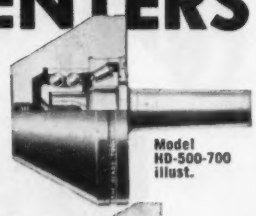
For extreme accuracy under heaviest radial and thrust loads . . .

Specify **RED-E ANTI-FRICTION CENTERS**

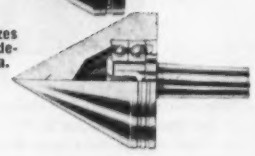


BULL

LATHES: 30 MODELS
GRINDERS: 22 MODELS

Model HD-500-700 illust.

Stocked in all standard taper sizes and straight shanks. Immediate delivery on head sizes up to 12" dia.



PIPE

OTHER HEADS AND SHANK SIZES AVAILABLE

FEATURE: 3 & 7 ABEC-SPEC bearings. Heads made of chrome nickel steel, hardened for greater resistance to abrasion wear. HD model has an adjustable bearing assembly with positive locking control.

CALL YOUR DISTRIBUTOR OR WRITE

Center Specialists Since 1908

RED-E TOOLS **READY TOOL COMPANY**
184 Garfield Ave. Stratford, Conn.

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5 times more production . . . 50% less labor after converting to Chromalox Electric Heat

After a soldering operation, flushing with hot water heated by Chromalox Electric Circulation Heaters cleans flux acids from 1000 units per day. Previously, a gas heated vat processed only 200. And one man now handles the former two-man operation.

Source: New York manufacturer of temperature controls.
Heaters: 18 kw. and 30 kw. Chromalox Circulation Heaters.
Operation: heating water from 70° to 210° in two stages.

Where can *you* save money with this fast, clean, safe, accurate, economical heat? Call your Chromalox Man for the Answers, or write today. 2659

CHROMALOX *Electric Heat*
INDUSTRIAL • COMMERCIAL • RESIDENTIAL
EDWIN L. WIEGAND COMPANY
7500 THOMAS BOULEVARD • PITTSBURGH 8, PA.

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PERFECT PROTECTION FOR ELECTRICAL CONTROLS

Oil, Water and Dust can't Penetrate!

McKINSTRY JIC Wiring Boxes provide complete protection against seepage of oils, dust, dirt or water, whether they are installed indoors or outdoors. For dependable performance, look for the McKINSTRY trademark before you buy. You can pay more, but you can't buy better quality JIC Wiring Boxes.

Write: Dept. 20-K for new illustrated catalog and price list on complete line of McKINSTRY Enclosures and Fittings.

McKINSTRY METAL WORKS, INC.
285 McKinstry Ave. • Chicopee, Massachusetts

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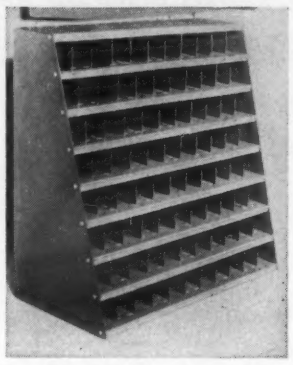
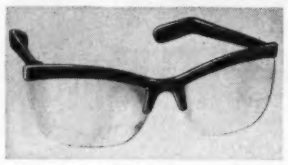
TOOLS & PARTS STORAGE UNIT
with shelves from 7 to 16½ in. deep



Shelves varying in depth from 7 to 16½ in. facilitate the orderly storage of various size tools and parts in this storage unit. Each part can be kept at the front, easily visible and within reach. Bin dividers adjust horizontally on 1-in. centers. Full-width label holder is provided for each shelf. Cabinet measures 34½ x 33⅝ x 17 in. over-all and is finished in forest green baked enamel. • **Bay Products Inc.**, 1801 W. Cambria St., Philadelphia 32, Pa.

▲ For more details circle NED-691 C on enclosed inquiry slip ▲

SAFETY GLASSES
protect eyes from flying objects



Lightweight, attractively styled, and comfortable to wear Safety Specs protect worker's eyes from flying objects. Clear lenses are usable on most hazardous industrial operations, and green lens types protect from welding and other glare. Price is only $6 per doz. • **General Scientific Equipment Co.**, 7516 Limekiln Pike, Philadelphia 50, Pa.

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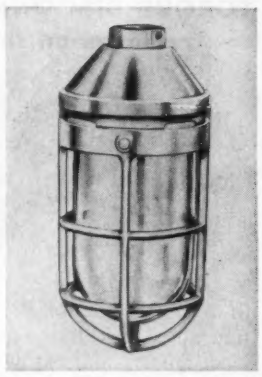
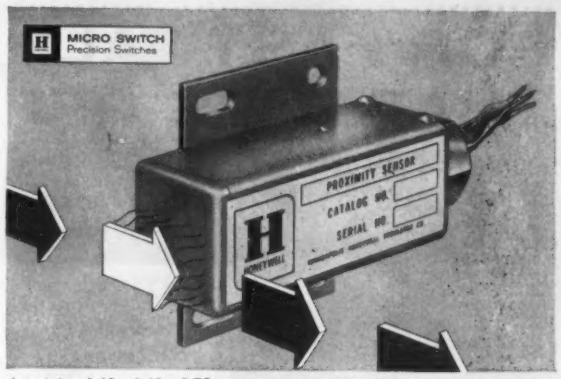
VAPORTIGHT LIGHT FIXTURES
in 100 and 200-w sizes



Guard, globe, and reflector of this cast aluminum vaportight light fixture can be removed without tools for relamping and cleaning. Fixtures are available in 100 and 200-w sizes with or without dome, shallow bowl, deep bowl, or angle reflectors. Metal parts are further protected from corrosive spray and fumes by PEC-9 white coating which matches the all-white porcelain enameled reflectors. Interchangeable straight and bracket adapters allow wall or ceiling mounting. Heat-resistant glass globes are standard in a choice of colors. AO-Series fixtures are UL-approved and meet Navy and other specifications. • **Pyle-National Co.**, 1334 N. Kostner Ave., Chicago 51, Ill.

▲ For more details circle NED-693 C on enclosed inquiry slip ▲



Actual size: 1.63 x 1.63 x 3.75

BUSY SWITCH
without a moving part!

This amazing switch detects metal parts that pass within ½" of the sensor—over 600 operations a minute—without ever touching them. Sensor has no moving parts to wear out, need never be replaced. Rugged stainless steel face. Sealed against cutting oils, sand and dust, operates submerged if necessary. Write for Data Sheet No. 163.

MICRO SWITCH . . . FREEPORT, ILLINOIS
A division of Honeywell
In Canada: Honeywell Controls Limited, Toronto 17, Ontario

Honeywell
MICRO SWITCH Precision Switches

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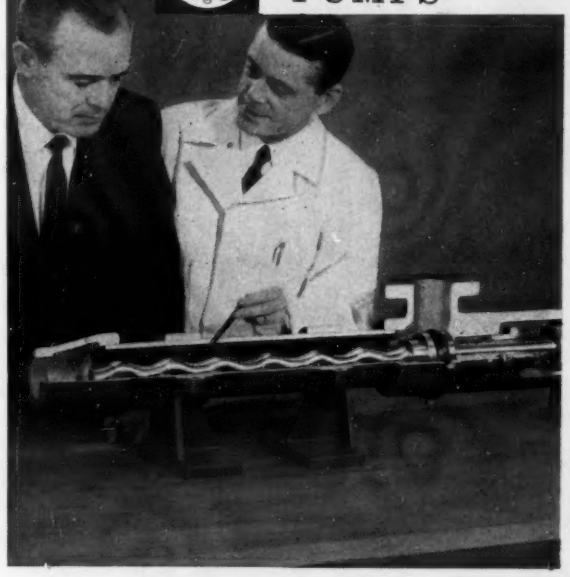
MOYNO® PUMPS



Let MOYNO'S® *"Progressing Cavities"* Cut Pump Maintenance Costs!

MOYNO's unique *"progressing cavity"* principle cuts pump maintenance costs because material being moved contacts only one moving element. MOYNOS are constructed to stoutly resist corrosion and abrasion. As shown in the cutaway model above, MOYNO's screw-like rotor revolves in a double-threaded stator forming *"progressing cavities"* that move material smoothly along, without foaming, aerating or crushing.

Typical materials pumped include non-pourable pastes, abrasive slurries, chemicals, foods, acids, even suspended solids up to one inch in size. Many materials now successfully pumped by MOYNO were once considered "unpumpable."

Capacities are available up to 500 gpm and pressures up to 1000 psi. Off-the-shelf replacement parts are always immediately available. Write today for Bulletin 30—NE

ROBBINS & MYERS, INC.
motors, household fans, Propellair industrial fans, hoists, Moyno industrial pumps
SPRINGFIELD, OHIO • BRANTFORD, ONTARIO

capacities to 500 gpm; pressures to 1000 psi

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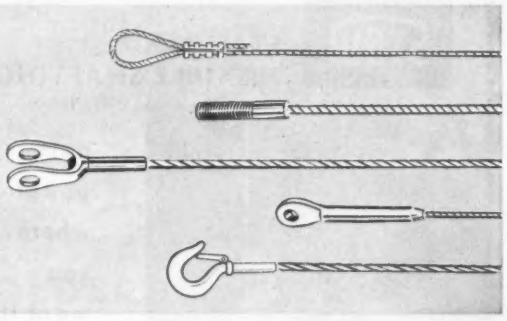
Are The Cable And Assemblies You Use Designed Specifically For Your Needs?



Or are you "getting by" with possibly less efficient, costlier-in-the-long-run substitutes? There's no need to settle for stock items if custom-designed Bergen cable and assemblies could do your job better, safer, for less.

Bergen has the experience, the equipment and the personnel to produce *the* cable and assembly your project requires . . . and deliver it quickly. Don't waste another day or dollar . . . bring your cable and assembly problems to Bergen today.

FREE! Send for Assembly Catalog CA-2

BERGEN
WIRE ROPE CO.
502 GREGG ST • LODI, N.J.
Specializing in the Unusual

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FOR FAST TALK THAT PAYS OFF

your business needs...

ELECTRONIC AMPLICALL INTERCOMMUNICATION

the "clear line" to everyone in your business...

available with privacy handset, light and chime signals

★ AMPLICALL saves time and cuts costs because it provides *2-second speech contact* within and between all departments of your business. At the touch of a button, you get information, issue instructions, hold conferences, speed action in plant and office. AMPLICALL takes the load off busy switchboards, ends wasteful walking and waiting—pays for itself in speedier, more efficient operations. There is an AMPLICALL system for your exact needs. Get the facts today.

★ See your Classified Phone Book under "Intercommunication" for the nearest AMPLICALL specialist—or write us direct for full details.

RAULAND-BORG CORPORATION
3535-H Addison St., Chicago 18, Ill.

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Portable mixer is big time-saver

mixes fluids quickly in can, drum, pail, or kettle

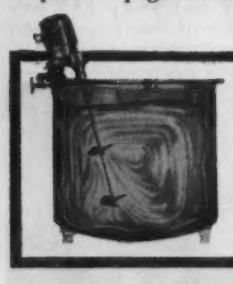
Why bother with special mixing tanks? You can power-mix fluids simply, rapidly in any open container—with a LIGHTNIN Portable Mixer.

Just clamp the LIGHTNIN to rim of vessel or to a separate support, as shown here. No baffles are needed in vessel.

Get just the mixing action you want by adjusting shaft angle. Rapid top-to-bottom turnover . . . slow roll . . . or vortex for quickly wetting fine powders. Your results are unconditionally guaranteed.

Mixer locks instantly at any position. True-running shaft is quickly removable, cannot loosen or jam. Widest choice of ball-bearing motors, shaft and propeller materials. Thirty portable models—⅛ to 3 HP—electric or air driven, direct or gear drive. Thousands in use.

For details, plus helpful tips on industrial mixing, request 28-page illustrated Catalog B-108.



FAST, UNIFORM MIX. Powerful propeller stream tumbles and rotates the batch thoroughly. No swirl, no dead spots with LIGHTNIN double-action mixing.

Lightnin® Mixers MIXCO fluid mixing specialists

MIXING EQUIPMENT Co., Inc., 165-c Mt. Read Blvd., Rochester 3, N.Y.
In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 19, Ont.

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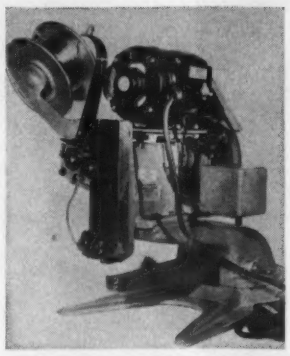
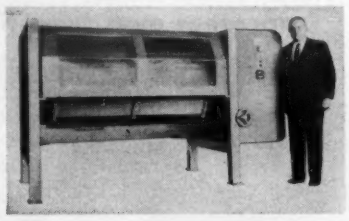
WIRE STITCHING MACHINE fastens ⅜-in. thick materials



Low carbon steel, aluminum, plastics, wood, and paper can be stapled by this portable wire stitching machine. It fastens materials up to ⅜-in. thick, making about 60,000 staples from a 5-lb coil of wire. Machine is actuated by foot switch or Micro Switch, and has a single-trip or multiple-trip clutch. Wire is stocked in 28 different round and flat gages, in standard finishes and colors. • **General Staple** Co., Dept. W, 28 E. 22nd St., New York 10, N. Y.

▲ For more details circle NED-698 C on enclosed inquiry slip ▲

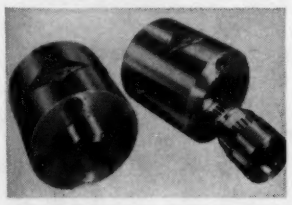
BARREL FINISHING MACHINE capacities up to 40 cu ft



Floating power drive of the Model V36 barrel finishing machine uses a belt and gear power transmission for smooth starts and stops and quiet operation. Machine is designed for large parts finishing, deburring, and polishing, offering variable tumbling speeds from 7 to 21 rpm. The 36 x 48-in. and 36 x 64-in. (illustrated) barrels hold up to 40 cu ft in one or two compartments. Magnetic brake motor with remote control and an optional tachometer are features. • **Rampe Mfg. Co.,** 14915 Woodworth Ave., Cleveland 10, Ohio.

▲ For more details circle NED-699 C on enclosed inquiry slip ▲

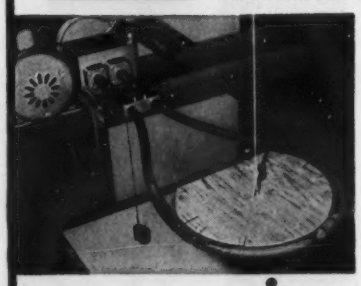
TORQUE DISCONNECT COUPLING releases on sudden shock loads



This line of torque disconnecting couplings protects expensive machinery from sudden shock loads which, if unchecked, would cause breakdowns. Models are available for shaft sizes from ⅛ to 6 in. with mean torque ratings from 5 to over 50,000 lb-in. They are readily adjustable over a torque setting range, disconnect accurately at the set torque overload, quickly and easily reset after release, and operate independent of friction. The outward movement of the pistons upon disconnect can be used to actuate Micro Switches to shut off motors, equipment, or control other operations. Action is reportedly faster than motor controls could stop equipment. • **Odin Corp.,** Castleton, Ind.

▲ For more details circle NED-700 C on enclosed inquiry slip ▲

STOW **STANDARD FLEXIBLE SHAFTING**



puts power where you want it!

Flexible shafting permits primary power transmission between shafts which are not collinear, or which have relative motion, allowing greater freedom of design in locating the drive and driven components. Stow standard power drive flexible shafts provide an ideal means of transmitting power motion over a curved path, reducing alignment and maintenance problems in power take-off and remote control situations. This eliminates complicated and expensive arrangements, involving the use of telescopic joints, and the danger of exposed moving parts.

If flexible shafting is considered in the early stages of design, many difficult situations can be simplied. To help you with your PTO and remote control problems, Stow offers the services of its specialized engineering staff. For simple, low-cost, efficient, easy to install power drive, investigate Stow standard flexible shafting. For tables of specifications and detailed instructions on how to order, write for Bulletin 5710.

OTHER STOW FLEXIBLE SHAFTS:

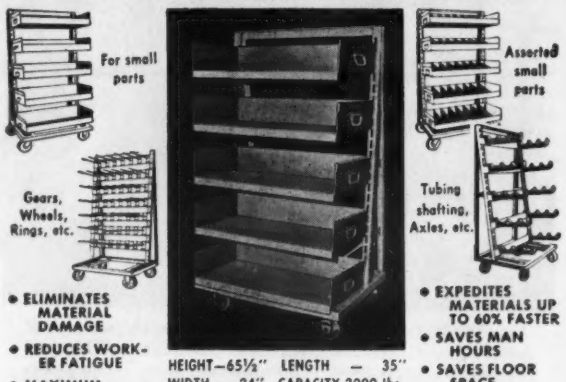
Power Drives and Remote Control	Bul. 570
Flexible Shaft Machines	Cat. 59
Lightweight Flexible Tool Shafts	Cat. 59
High Speed Power Drive Shafts	Bul. 590

STOW MANUFACTURING CO.
26 Shear Street • Binghamton, N. Y.

▲ For more details circle NED-701 C on enclosed inquiry slip ▲

THE VER-T-RACK

THE ACME OF VERSATILITY



- ELIMINATES MATERIAL DAMAGE
- REDUCES WORKER FATIGUE
- MAXIMUM EFFICIENCY AT MINIMUM COST

HEIGHT—65½" LENGTH — 35"
WIDTH— 24" CAPACITY 2000 lbs.

- EXPEDITES MATERIALS UP TO 60% FASTER
- SAVES MAN HOURS
- SAVES FLOOR SPACE
- GREATER SAFETY FACTOR

Equipped with 6" roller bearing steel wheel casters

VER-T-RACK can be handled with lift truck.
Trays are adjustable on **VER-T-RACK**
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Slightly higher west of the Rockies Write today for descriptive literature

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MATERIAL HANDLING DIVISION
• 2020 CENTER STREET • CLEVELAND 13, OHIO

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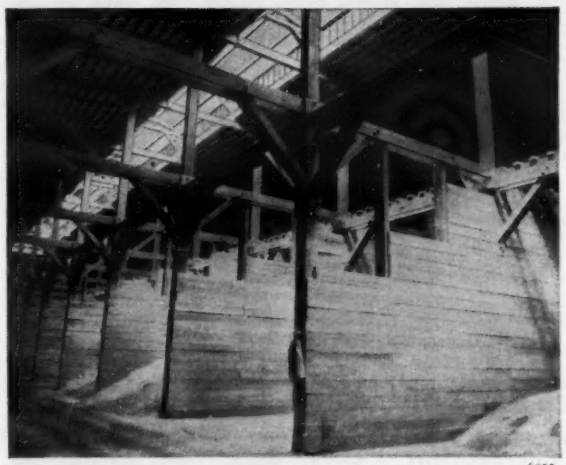

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structoglas®

Structoglas Inc., Dept. 306 Cleveland 9, Ohio

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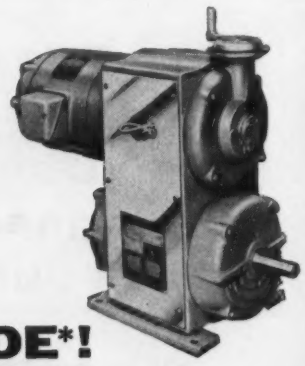

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A wrench and screwdriver are all the tools you need to change the ALLISPEDE DRIVE from an upright to a horizontal drive—for floor, wall, or ceiling mounting. Feet, end brackets, control hand wheel, conduit box, and output shaft can be positioned to fit space requirements.

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A80-119

*ALLISPEDE is a trademark of The Louis Allis Co.

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- No special wiring required.
- Plugs into a standard 15-ampere, 60-cycle, 115 v convenience outlet.
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- Convection cooled, requires no maintenance.
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- Can be wall or battery mounted.
- Fully automatic; portable.
- For all 12-volt hand motorized lift truck batteries, up to 660 A.H.

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Manufacturers of Plyver-Clad® Industrial Batteries • PLASTICELL® • and Plastic® Batteries for Communications, Control, and Auxiliary Power • Producers of AutoReg® Silicon Chargers and AutoCel® • Charger-Battery Combinations.
*Trademark

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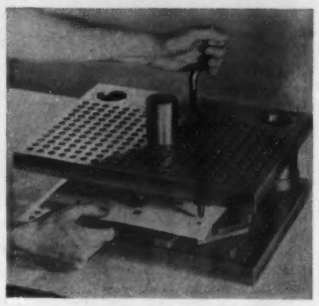
ADJUSTABLE PUNCHES & DIES
wide variety of hole patterns possible in many sizes and shapes



Both long and short-run production jobs can be performed with Di-Acro adjustable punches and dies. Economical punching of a number of holes of varying size and shape is possible in one operation with the re-usable tooling. Punch and die holders are arranged on die sets by means of a template into a variety of hole patterns. Material up to 16-gage mild steel and 1/8-in. aluminum can be punched to tolerances of ±0.005 in. Setup can be either outside the press or with the die set in the press.

Die set holes are spaced on 3/4-in. centers in both directions. Holes can be punched anywhere within the die set area. Two styles are offered: Back post type with minimum press shut height of 6 1/4 in.; and center post type which requires minimum press shut height of 6 3/4 in. Wide variety of punches and dies in rounds, squares, rectangular, notching, receptacle, keyhole, and other shapes is available, as are special shapes, die sets, and holders. • O'Neil-Irwin Mfg. Co., 582 Eighth Ave., Lake City, Minn.

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STORAGE-FEEDER UNIT
has one to six storage decks

Capacity for up to 12,000 parts, adjustable feed rate up to 6000 parts per hour, and provision for handling several different parts simultaneously are built into this storage-feeder unit. Standard floor or overhead suspended units are made up of one to six storage decks, each a hardened and polished spring steel spiral track that can be wound into single or multiple part lanes. Parts enter at the outer diameter and spiral to the center for discharge to the next lower deck or to processing. Parts are moved by double-row nylon brushes attached to wiper arms, driven by a motor and speed reducer located at the base. Self-cleaning units are offered in deck diameters from 40 to 72 in. • F. Jos. Lamb Co., 5663 E. Nine Mile Rd., Detroit 34, Mich.

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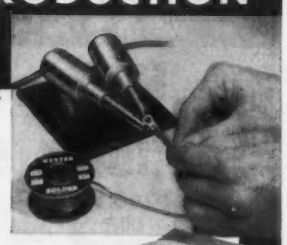
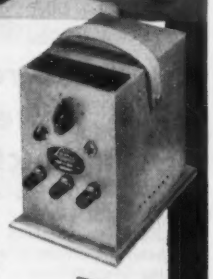
INCREASE PRODUCTION as much as 40%

CUT POWER CONSUMPTION

... with Luma



RESISTANCE SOLDER TOOLS



Designed to handle numerous production soldering jobs from fine, "pinpoint" precision to medium-heavy industrial operations. More than 16 styles of electrode holders to fit individual soft or hard soldering operations, (see above bench type holder).

Eighteen stages of heat with a 6-stage selector switch used in conjunction with 3 secondary terminals.

A wide range of power—5 to 1800 watts—quickly supplies concentrated heat at exact area—insures perfectly soldered joints with maximum—

SPEED • SAFETY • FLEXIBILITY • ECONOMY

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USE THE Nissen BALL POINT WRITING TUBE make permanent marks on metal wood plastic glass

This ball point marker saves considerable time in marking, numbering or coding products made of wood, metal, plastic and glass. It is widely used because:
• tube with ball point makes application easy on rough or smooth surfaces • special, fast drying opaque ink withstands heat and weathering • marks will not chip, peel, fade or rub off • 7 different colors are available • 3 different size ball points make fine or broad lines

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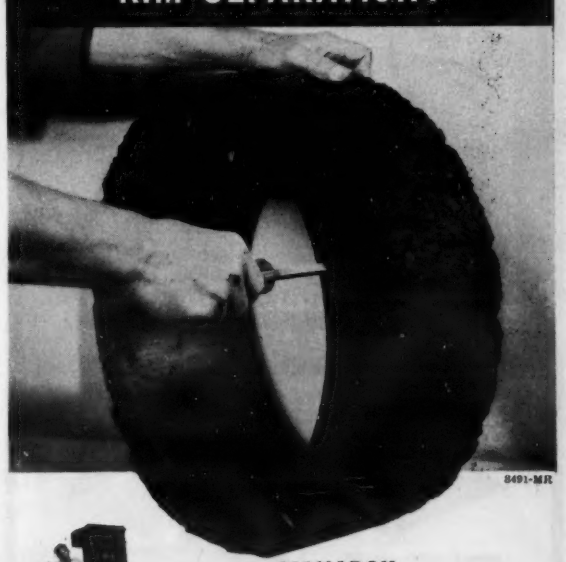
STOP PREMATURE RIM SEPARATION!



MONARCH SOLIDS FEATURE NEW COMPOUND AND BONDING PROCESS... REDUCE REPLACEMENT COSTS

Embedded metal scrap, chemicals and excessive heat cause premature solid tire failure by destroying the bond between the tire and rim. MONARCH engineers solved this problem by combining an advanced rubber-to-metal chemical bonding process with a new, extra tough, natural rubber stock . . . Compound T-5100. Field tests prove that *MONARCH solids now feature superior resistance to rim separation* caused by the above factors. And cost-conscious buyers are specifying MONARCH solids to cut replacement costs!

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air compressors

Kellogg-American compressors are engineered for **longer trouble-free life.** More delivered air power per kilowatt hour means lower operating cost. Warehouses and parts depots throughout the country for faster shipment and service.

Complete size range—⅓ thru 20 H. P. Single and two-stage models.

The compressor is the HEART of your business. *Keep it ticking.*

WHAT ARE YOUR NEEDS? *For full details write to:*

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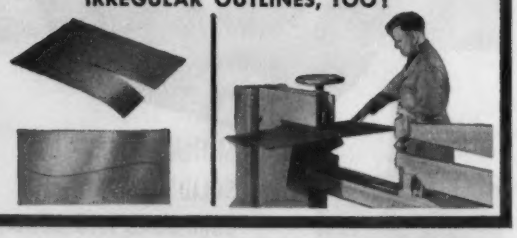
makes quick, easy work of cutting true circles

CUTS STRAIGHT LINE WORK AND IRREGULAR OUTLINES, TOO!



Here's a fast, versatile and profitable performer! Designed to provide the utmost in operating ease and cutting accuracy, this all-new Niagara Ring and Circle Shear No. 31-RC features a self-compensating circle arm which floats on guided ways to maintain true center automatically. Time-consuming adjustment for variations in thickness of material, overlap of cutters and diameter of circle is thereby eliminated.

Set-up is simple: An adjusting crank and convenient scale enable quick positioning of the circle arm for cutting to various diameters. A quick-acting cam lever actuates the center clamp of the circle arm to hold varying thicknesses of material securely at all times.

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REDUCING PRINTER & PROCESSOR reduces drawings to minimum size

Actually a large movie camera which takes a picture of a drawing while it moves through the machine, the Revolute printer and processor reduces the drawing to a size sufficiently readable in ultimate copy prints. The reduced size transparencies are made directly from drawings for immediate blueprint or diazo reproduction. They can be made as positives or negatives, on paper or film, and in ½, ⅓, ¼, 1/5, 1/6, 1/7, or ⅛ the size of the original. Printer accepts drawings up to 42 in. wide by any length. It will develop, fix, wash, and dry silver-sensitized paper or film up to 21 in. wide at speeds up to 30 lineal fpm. • **Charles Bruning Co.,** Paragon-Revolute Div., 1800 W. Central Rd., Mt. Prospect, Ill.

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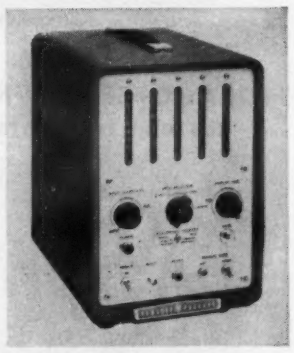
ELECTRONIC COUNTER has 1 cps to 1.2 megacycle range



Frequency and random events per unit of time are automatically measured by the Model 521G electronic counter. With its manual gate, it totalizes electrical events, and with transducers, it provides measurements of speed, revolutions per minute and second, weight, pressure, temperature, and acceleration. Frequency range is 1 cps to 1.2 megacycles and ±1 count. Counter has five-place registration. A self-check confirms accuracy of operation. It can be used with a Model 560A digital recorder which makes a printed record. Price is $650. • **Hewlett-Packard Co.,** 275 Page Mill Rd., Palo Alto, Calif.

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Circuit Breakers

I-T-E Circuit Breaker Co.—Ratings, specifications, and operating characteristics of a diversified line of molded case circuit breakers found in 40-page illustrated Bulletin 5001-1A serve as a selection guide for a wide variety of applications. Line ranges from small units for lighting circuit protection to Cordon line with 100,000-amp interrupting capacities. Available accessories and modifications are also detailed.

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JONES #4800

Hand Tachometer

BROAD RANGE
50 — 50,000 R.P.M.
with stop button

assures better production

HIGHER OUTPUT — QUALITY CONTROL obtained by maintaining proper machine speeds. Also helps avoid breakdowns by detecting irregularities.

CARRY IT FROM JOB TO JOB and keep it handy for quick, accurate tests. Choice of readings in R.P.M., F.P.M., etc.

GUARANTEED ACCURACY—superior construction, trouble-free. Unaffected by moisture, temperatures, electric currents.

Many other Portable and Stationary Models are available for use on all types of industrial machines.

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JONES MOTROLA CORP.
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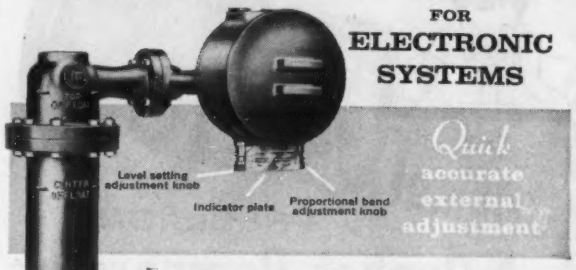

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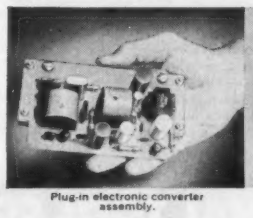
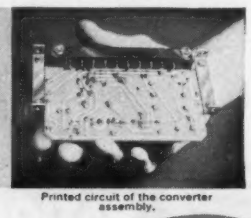
- **Has plug-in converter with printed circuit. Conventional leads and unnecessary wiring are eliminated.**

Features external adjustment for proportional band and liquid level height. Extreme simplicity in design. Silicon transistors and diodes . . . no vacuum tubes. No additional parts to reverse action. Line voltage fluctuation has negligible effect.



Plug-in electronic converter assembly.



Printed circuit of the converter assembly.

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FISHER Controls SINCE 1880

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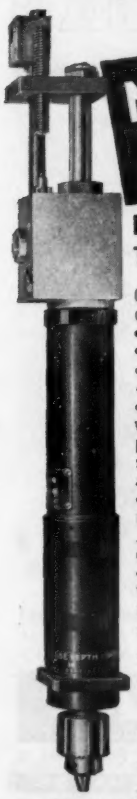

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- Models from 650 to 22,000 RPM
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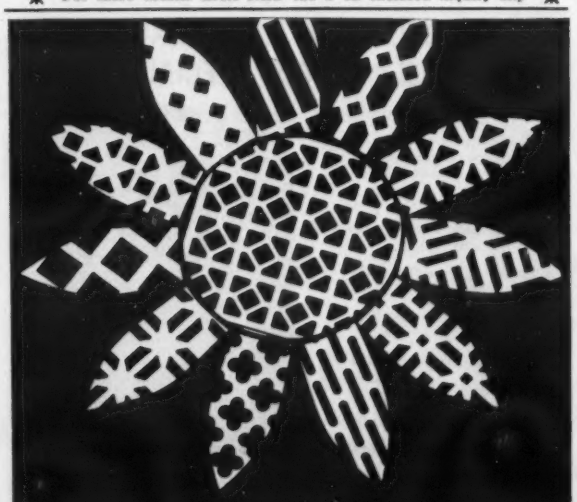

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To get complete information on the wide line of Cross Perforated Metals, write to . . .

NS NATIONAL STANDARD COMPANY
Cross Perforated Metals
NATIONAL-STANDARD COMPANY
Carbondale, Pa.

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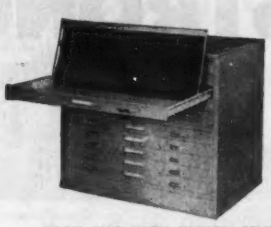
MAYLINE



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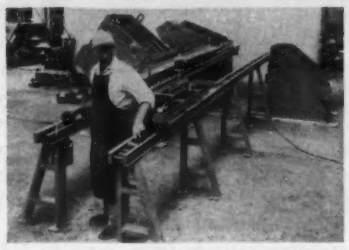
MAY-O-MATIC "E" COMBINATION

MAYLINE

▲ For more details circle NED-723 C on enclosed inquiry slip ▲

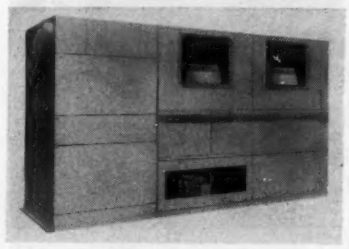
HEAVY PARTS HANDLER
brings them to single assembly point



Several heavy parts are brought to a single assembly position by this handling system which makes use of gravity conveyors, chutes, and tub tilters. Conveyors and chutes serve as storage magazine for parts in addition to conveying them to assembly point. Tub tilters are adjusted to any position by reversible electric drive. Brush type oilers can be utilized to prelubricate parts prior to assembly. • **Automation Development Corp.**, 135 Reynolds Rd., Mentor, Ohio.

▲ For more details circle NED-726 C on enclosed inquiry slip ▲

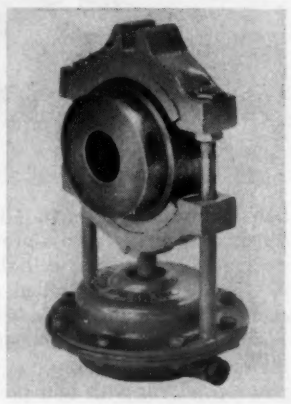
AIR CONDITIONERS
20 to 60-ton evaporative types



Added to the basic PAC line of packaged air conditioners are five B models of the evaporative condenser type in capacities of 25, 30, 40, 50, and 60 tons. They have small outside casings and are equipped with 10 and 15-hp compressors which, through a two-step thermostat, handle partial loads by cutting in or out. Four-step units with two thermostats are also available. • **Acme Industries, Inc.**, 600 N. Mechanic St., Jackson, Mich.

▲ For more details circle NED-727 C on enclosed inquiry slip ▲

DIAPHRAGM BRAKE
controls unwinding stand tension



Accurate tension control for unwinding stands used with small cutters and slitters, or printing machines running foil, film, or light paper stock is afforded by this low torque diaphragm brake. Unit provides intermittent drag to prevent overrunning on applications requiring 1600 lb-in. torque or less. Equipped with high speed linings, brake is self-adjusting. Air diaphragm has ¾-in. stroke. Operation is manual or automatic. • **Horton Mfg. Co.**, 1179 15th Ave. S. E., Minneapolis 14, Minn.

▲ For more details circle NED-728 C on enclosed inquiry slip ▲

The Allis-Chalmers 2,000-lb FT20-24 is available with either standard or POWER SHIFT transmission — for either gasoline or LP gas — with pneumatic tires as FTP20-24.

The AC FT20 gives you dollar-saving differences you can MEASURE

. . . **in horsepower** — 35 husky industrial engine horsepower gives the FT20 the most power in its class.

. . . **in percent** — climbs grades up to 40% loaded to outclimb other 2,000-lb trucks.

. . . **in hours** saved servicing — you can get at the engine for routine service in seconds, change the clutch in only half an hour.

Let your Allis-Chalmers dealer show you how you will be dollars ahead by *any* unit of measure with Allis-Chalmers FT20-24. He will be glad to demonstrate. Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS AC

BH-130

▲ For more details circle NED-729 C on enclosed inquiry slip ▲

ACRA ELECTRIC DRUM HEATER

MELTS *Speeds up* SLOW FLOW MATERIALS

• RESINS • WAXES • OILS • GREASES
MOLASSES—TARS—MANY OTHERS

SAVES TIME, MONEY, MATERIAL

Turns solid or slow flow materials into smooth flow liquids, quickly and completely emptied from their drums. Quick, easy, tight gripping on-off assured by spring actuated toggle clamp. 3 heat selector switch. Heaters used 1 or more to a drum.

55 GAL. Drum Heater #RH-1, shipping weight 10 lbs. $29.50

5 GAL. Drum or straight sided Pail Heater #PH-5—S/W 5 lbs. $16.75

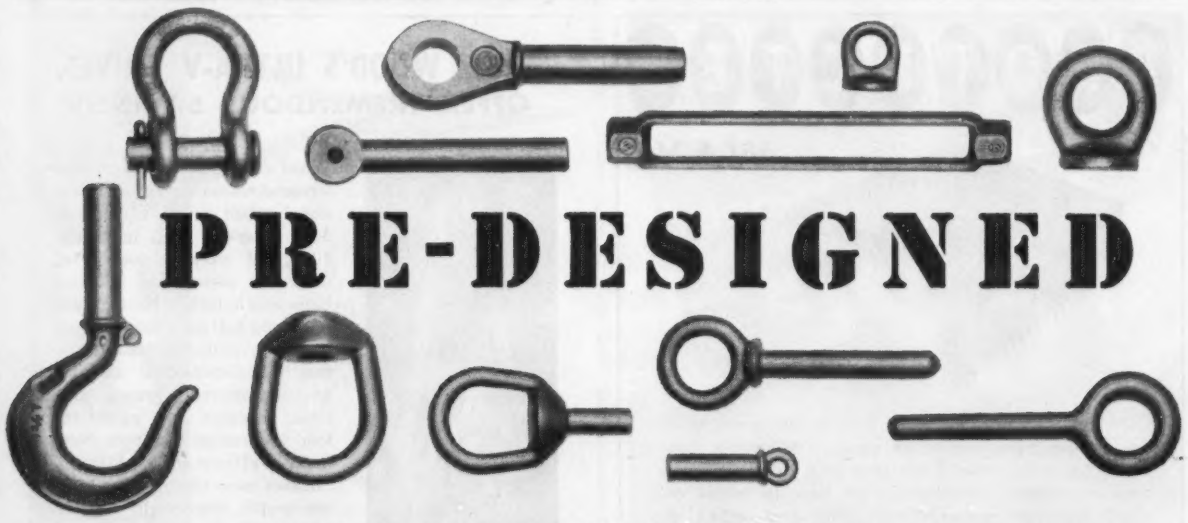
FOB Chicago

PAYS FOR ITSELF IN HOURS PAYS PROFITS FOR YEARS!

AC/DC Models for 3000 watts, 230 volts or 2500 watts, 115 volts. 5" aluminized steel heater band. Long life nickel-chrome heating element. Fully guaranteed against defects in material or workmanship.

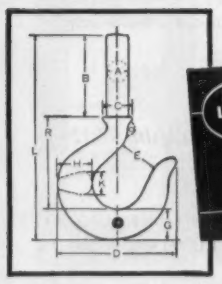
ORDER DIRECT FROM
ACRA ELECTRIC CORPORATION
9907 Pacific Ave. • Franklin Park, Ill.

▲ For more details circle NED-724 C on enclosed inquiry slip ▲



PRE-DESIGNED

FORGED FITTINGS READY FOR INSTALLATION
CONSISTENT QUALITY—NO REJECTS



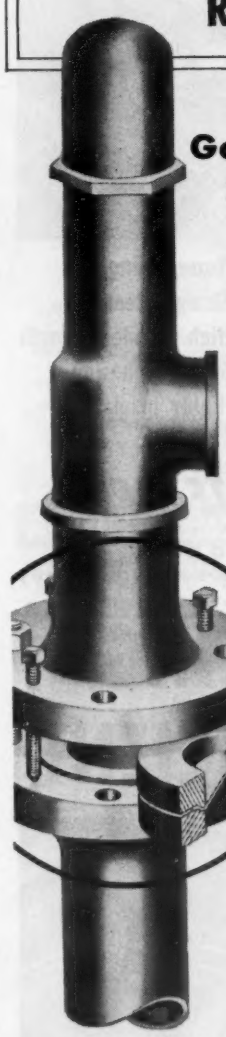
Full line catalog with complete engineering data available from your distributor.

CROSBY-LAUGHLIN *Division*
FT. WAYNE, INDIANA

INDUSTRIAL DISTRIBUTORS — SERVING INDUSTRY ECONOMICALLY — THE RIGHT HAND OF PRODUCTION

▲ For more details circle NED-725 C on enclosed inquiry slip ▲

Stop Product Losses Through Leaking Pressure Relief Devices!



Get A "Bottle-Tight" Seal With BS&B *Safety Heads!*

Product loss in a processing or transfer system can often be traced to leaking pressure relief valves. To make matters worse, it may be extremely difficult to make repairs that will stop this loss with any degree of permanence.

In hundreds of such cases BS&B Quik-Sert Safety Heads, installed upstream and in series with the leaky relief device, have provided the perfect solution to the problem. Pressure relief accuracy is in no way impaired . . . in some cases it is actually improved.

Quik-Sert Safety Head

When pressure in the system is bled back to normal, the valve is free to close as usual. The BS&B Quik-Sert Safety Head can be replaced in a matter of minutes at any later convenient time.

If you need a leak-tight pressure relief assembly for normal operation of your pressured systems, BS&B Safety Head specialists will gladly survey your installation and submit recommendations.

OVER 60 YEARS BS&B ANOTHER EXAMPLE OF PRODUCT LEADERSHIP

Write now for details.

BLACK, SIVALLS & BRYSON, INC.
Safety Head Div., Dept. 2-GD-3
7500 East 12th Street
Kansas City 26, Missouri
Telephone: BEnton 1-7200

▲ For more details circle NED-730 C on enclosed inquiry slip ▲

Specify Strong Smooth Safe SALEM

COPPER BRAZED

FORMED STEEL PULLEYS

for your power transmission

Engineered for Lawn Mowers, Garden Tractors, Compressors, Agricultural and Industrial Equipment. Smooth rolled edges reduce belt wear. Solid steel discs and hubs weather heavy loads and high speeds.

Write for Engineering booklet to help you specify your Pulley requirements.

SALEM STAMPING & MFG. CO., INC.
DEPT. 14 SALEM, OHIO

▲ For more details circle NED-731 C on enclosed inquiry slip ▲

For the finest in friction, rubber or plastic tape, always look to ACCURATE . . . suppliers of "your best buy in tape."

Non-raveling
Straight tearing
High tensile strength
Strong adhesion
Highly insulating

ACCURATE TAPE
FRICTION ••• RUBBER ••• PLASTIC
ACCURATE MANUFACTURING CO.
Garfield, New Jersey

▲ For more details circle NED-732 C on enclosed inquiry slip ▲

SELF-ACTING, SELF-SUFFICIENT

THE Taylor Self-Acting Temperature Controller works for you night and day. Requires the very minimum of attention of maintenance, is rugged and simple in operation. In fact, you can install it and forget it!

Requiring no auxiliary air supply, it is the perfect answer on processes involving no extreme load changes.

Double seated valves available up to 2"; single seated composition disc types up to 1".

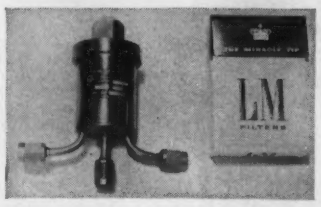
Numerous standard temperature ranges within 10° and 340°F., and semi-standard temperature ranges within 165° and 610°F. Choice of bulb material and type of connection.

Ask your Taylor Field Engineer or write for **Catalog 36-R.**
Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ontario.

Taylor Instruments MEAN ACCURACY FIRST

▲ For more details circle NED-733 C on enclosed inquiry slip ▲

PRESSURE REGULATOR
adjusts from 2 to 17 psi air



Metal - to - metal seals and only one moving part are features of Type 415830 all-stainless pneumatic static pressure regulator for instrument use. Regulated pressure is adjustable from 2 to 17 psi air and is accurate to ±0.1 psi at temperatures from −65 to 600° F. Regulator can be adapted to pressures to 100 psi without changing the basic unit, and will withstand up to 1000° F without damage. • **Gladden Products Corp.**, 635 W. Colorado Blvd., Glendale 4, Calif.

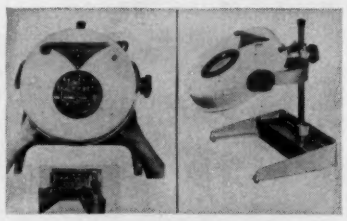
▲ For more details circle NED-734 C on enclosed inquiry slip ▲

PAPER SHREDDER
capacity over 1 ton per hour

Old papers, confidential records, magazines, and office records are continuously shredded by the Model 14-8 shredder, a high speed machine powered by a 7½-hp motor. Its eight 13¾ - in. revolving knives dispose of over 1 ton of paper per hour. All revolving parts are safely housed in a steel cabinet. Paper is converted into uniform strands suited for packing or baling. • **Universal Shredder Co.**, 2934 Bay Rd., Saginaw, Mich.

▲ For more details circle NED-735 C on enclosed inquiry slip ▲

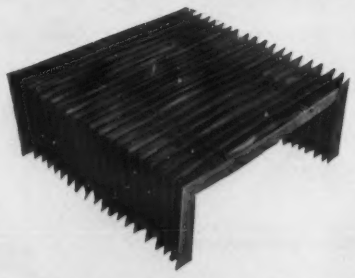
ILLUMINATED MAGNIFIER
provides 2.5, 3.5, 5, and 7 X stages



Distortion - free, color - corrected image up to seven times actual size is provided by this self-illuminated Powerscope magnifer, designed to aid assembly and manipulation of miniature parts. The 5-in. diameter system consists of lens elements providing 2.5 X magnification with an additive lens cell that increases magnification to 3.5 X. Knob-controlled multiplier lens will double each of these stages for added 5 and 7 X magnifications. Field of view is respectively, 14, 6, 2, and 1⅝ in diameter. Entire housing will swivel out of normal position. Unit with four power stages sells for $144.50. • **Ednalite Optical Co.**, 200 N. Water St., Peekskill, N. Y.

▲ For more details circle NED-736 C on enclosed inquiry slip ▲

PROTECTED WAYS

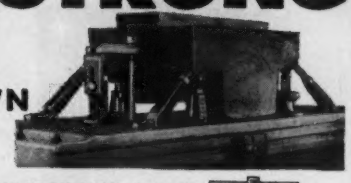


GORTITE way-protectors for milling machines, grinders, boring bars and other machine tools are fabricated to order from fiberglass and new neoprene-base materials. Instructions on how to order and apply the wide range of horizontal and vertical designs are contained in new bulletin GW-100. A&A MFG. COMPANY, Inc., 712 S. 12th Street, Milwaukee 4, Wis.

ALL SHAPES AND CONTOURS
BOOTS . . . SLEEVES . . . WAY PROTECTORS

▲ For more details circle NED-737 C on enclosed inquiry slip ▲

ARMSTRONG
SET-UP and HOLD-DOWN TOOLS



ARMSTRONG Set-up and Hold-down Tools reduce setting-up time—keep men and machines producing. Designed for use on planers, drill presses, milling machines, etc., they hold work securely and rigidly, and thereby reduce spoilage and prevent costly accidents.

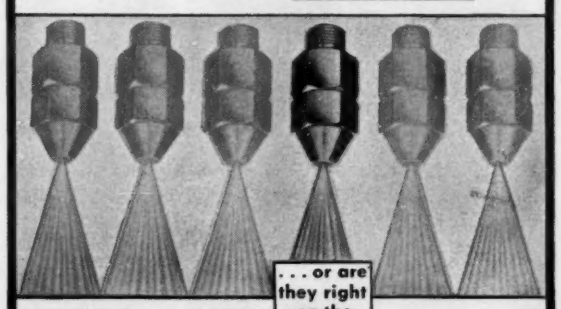
Your local Armstrong Distributor carries ARMSTRONG Set-up and Hold-down tools in stock in sizes for every operation. Stop haphazard setting-up methods. Provide each of your machines with a full complement of ARMSTRONG Set-up and Hold-down Tools.

Write for circular

ARMSTRONG BROS. TOOL CO.
5245 W. ARMSTRONG AVE. • CHICAGO 46, U.S.A.

▲ For more details circle NED-738 C on enclosed inquiry slip ▲

Are the SPRAY NOZZLES you use in the grey zones . . .



. . . or are they right on the beam?

Like an electronic system, a spray nozzle system can be *tuned* for maximum performance. To do this select spray nozzles that *exactly* fit the system needs . . . in terms of capacity, spray characteristics and materials. The use of Spraying Systems spray nozzles keeps spraying installations out of the costly grey zones. The reason: you have a choice of over 12,000 *standard* nozzle types and capacities to match the nozzles exactly to your need.

FOR PROOF . . . write for Catalog No. 24.

SPRAYING SYSTEMS CO.
3211 Randolph St. • Bellwood, Ill.

▲ For more details circle NED-739 C on enclosed inquiry slip ▲

NEW WOOD'S ULTRA-V DRIVES OFFER TREMENDOUS SAVINGS!

UV/960

Wood's new Ultra-V Drives offer tremendous savings over conventional v-belt drives . . . up to 50% in space, 27% in weight, 30% and more in costs. And there are savings on bearings, bases and housings. New, greatly improved belt materials and new belt construction assure unmatched dimensional stability, amazing strength, greater grip, added support and equalized load for tension members. New, high performance, Ultra-V Sheaves have smaller diameters, less width, less weight and tremendous strength, are equipped with famous "Sure-Grip" Bushings.

Woods *write for bulletin 9102*

T. B. WOOD'S SONS COMPANY CHAMBERSBURG, PA.
ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS

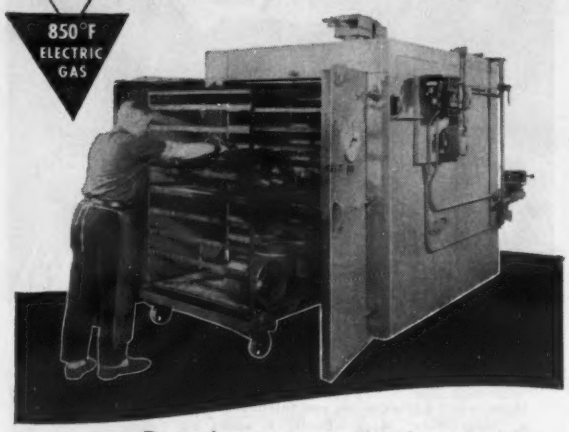
▲ For more details circle NED-740 C on enclosed inquiry slip ▲

PRODUCTION OVENS

DESPATCH OVEN CO.

laboratory heat control with horizontal air-flow systems

850°F ELECTRIC GAS



Despatch ovens are excellent for maintaining constant production quality where heat control is important. For example, baking phenolic finishes on coils, stators, etc., finish baking japans, lacquers, enamels or ceramics . . . drying adhesives, dehydrating chemicals, etc. Sizes for laboratory and production operations. Rugged, available in standard and special sizes.

APPROVED SAFETY SYSTEM

DESPATCH OVEN CO

Write today for bulletin No. 202-10

DESPATCH OVEN CO. 619 S.E. 8th St., Minneapolis, Minn.

▲ For more details circle NED-741 C on enclosed inquiry slip ▲

for your

magnet problems

F-300 CERAMIC PERMANENT MAGNETS

- ✓ Economical Piece Price
- ✓ Economical Tooling
- ✓ Prompt Delivery
- ✓ Engineering and Sample Service

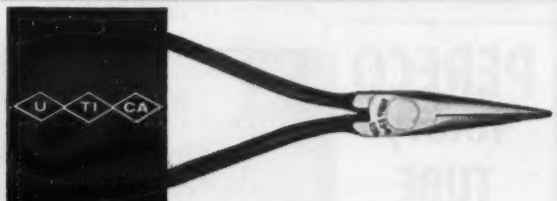
for

- ✓ Latches
- ✓ Can Openers
- ✓ Toys, Games, Novelties
- ✓ Bulletin Boards
- ✓ Etc.

Write for Brochure 1-59

d. m. STEWARD MANUFACTURING CO.
3620 Jerrome Ave.
Chattanooga 1, Tenn.

▲ For more details circle NED-742 C on enclosed inquiry slip ▲



UTICA

NEW MIDGET CHAIN NOSE!

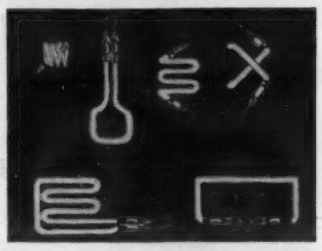
Specially designed for delicate subminiature assembly, this new plier is the first of its size and kind. It's a precision instrument offering the thinnest nose possible. Available in 4", 4½", and 5" sizes. Call your Utica distributor or write for complete information.

Utica Drop Forge & Tool Division, Kelsey-Hayes Company, Utica 4, N. Y.

tools the experts use!

▲ For more details circle NED-743 C on enclosed inquiry slip ▲

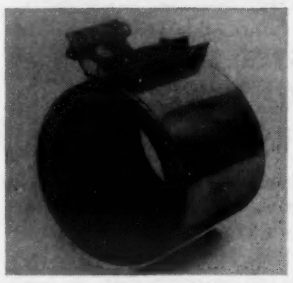
CUSTOM LIGHT SOURCES
in size, shape, color to suit job



Built in almost any size, shape, and color to meet requirements of special lighting applications, Aristo cold cathode lamps are usable in electronic, industrial, and scientific equipment. Output is 80 to 120 lumens per watt, five times that of incandescent lamps. Lamps are shaped into circles, squares, spirals, oblongs, hairpins, grids, and other forms from 5 to 15-mm OD tubing. They can be operated on saturable transformers, dc power supplies, and high frequency supplies. • **Aristo Grid Lamp Products, Inc.**, 65 Harbor Rd., Port Washington, L.I., N. Y.

▲ For more details circle NED-744 C on enclosed inquiry slip ▲

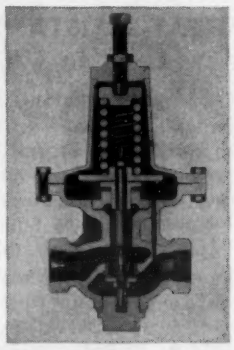
BAND HEATERS
ceramic insulated radiation type



Flexible, ceramic insulated, electric band heaters, designed to be attached to the component to be heated, operate by radiation. Thus, temperature of the resistance wire is not affected by the part being heated, and pressure on the heating surface is not required. Heaters are made to specification only in diameters from 1½ in. up in any fractional increments and widths from 1 in. up in ½-in. increments. They are rated 40 w per square inch. • **Industrial Heater Co.**, 417-14 Canal St., New York 15, N. Y.

▲ For more details circle NED-745 C on enclosed inquiry slip ▲

PRESSURE REDUCING VALVE
for water and other liquid service



Close control of water consumption is possible with the broadened line of Hi-Flo reducing valves for water and liquid service. Various classes are designed for inlet pressures from 10 to 300 psi, temperatures to 180° F, and reduced pressures from 5 to 100 psi. Features include inherent capacity regulation, long diaphragm travel for full flow, smooth throttling action, tight shut-off, renewable trim, screwed or flanged ends, and cast iron or bronze bodies. Sizes range from ½ to 2 in. • **Leslie Co.**, 129 Delafield Ave., Lyndhurst, N. J.

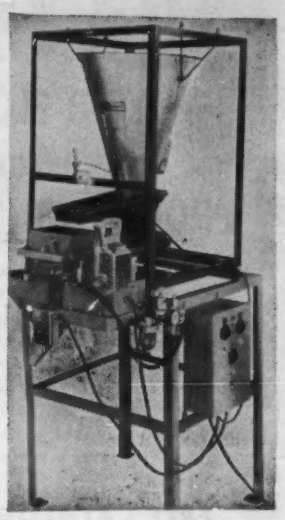
▲ For more details circle NED-746 C on enclosed inquiry slip ▲

"TORQUE WRENCH" MANUAL

▲ For more details circle NED-747 C on enclosed inquiry slip ▲

NET WEIGHING MACHINE

Over-under indicator provides constant visual check on package weight



This machine's Exact Weight precision scale, with visual indicator, provides a continual reference for fast and accurate adjustment. Eliminates spot checking. Vibratory feed has two speeds, fast to trickle, to assure accurate fill. Weigh hopper is air-cylinder operated. Model 620 NW has 10 lb. capacity; 610 NW, 3 lb.

Other types of weigh feeders, sackers and precision scales available in capacities for a wide range of weighing and check weighing jobs. Write for Bulletin 3318.

Find us in your local "Yellow Pages"

Sales and Service Coast to Coast

THE EXACT WEIGHT SCALE CO.
930 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: 5 Six Points Road, Toronto 18, Ont.
BETTER QUALITY CONTROL...BETTER COST CONTROL

▲ For more details circle NED-748 C on enclosed inquiry slip ▲

CHOOSE FROM 75 TYPES AND SIZES

Abart SPEED REDUCERS

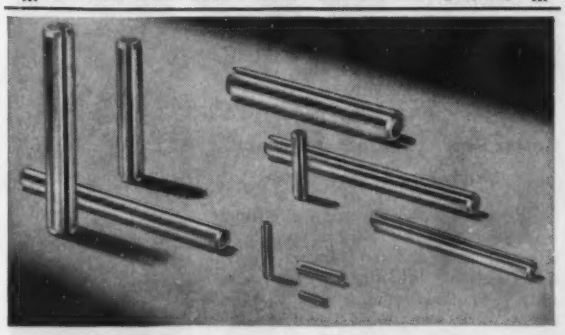
Compact, economical, trouble-free Abart power packages fill any speed reduction need. Any desired shaft arrangement—worm, spur or combination models—fractional to over 400 hp. ratings—single or double reduction—ratios to 10,000 to 1.

Send now for Abart pocket-size engineering data book and catalog.

FREE data-packed 96 page pocket-size catalog

ABART GEAR and MACHINE CO.
4831 WEST 16th STREET • CHICAGO 50, ILLINOIS

▲ For more details circle NED-749 C on enclosed inquiry slip ▲



Versatile—and economical—fasteners...
SEL-LOK spring pins

- 101 uses—as keys, cotter pins, axles, hinge pins, wrist pins, stop pins, pivots, etc.
- Eliminate costly tapping, reaming, peening, milling
- Swift fastening—just drill and drive
- Can be reused repeatedly
- Secure locking—won't work loose despite shock or vibration

SEL-LOK spring pins are available in carbon and corrosion-resistant steel (from 1/16 x 3/16 through ½ x 5 in.) and beryllium copper (1/16 x 3/16 through ¼ x 3½ in.). See your authorized distributor for details or write us for Bulletin 2331 and samples.

INDUSTRIAL FASTENER Division **sps**
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle NED-750 C on enclosed inquiry slip ▲

NEW! BLACKMER

VARI-FLO PUMPS and PROPORTIONING SYSTEMS

You'll benefit from new economy and efficiency with Blackmer rotary Vari-Flo Pumps and Proportioning Systems for stream blending of liquids or transferring liquids at varying flow rates from the same pump. Eliminates the need for variable-speed motors, makes old-fashioned batch blending cumbersome and obsolete, saves costs and adds efficiency to a variety of processes.

FREE CATALOG!
Write for free Vari-Flo Pump Bulletin No. 600

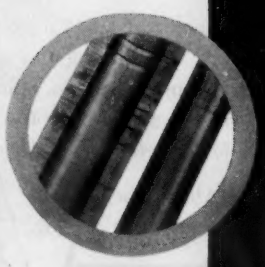
"liquid materials handling"® equipment

BLACKMER
PUMP COMPANY
Grand Rapids 9, Michigan

▲ For more details circle NED-751 C on enclosed inquiry slip ▲

NEW ELLIOTT TUBE EXPANDERS

roll tubes into thick sheets in one pass



Use of **NEW** continuous-rolling technique here—shows uniform seal, with all Keys preserved, and no signs of shear

OLD step-rolling method results in non-uniform surface . . . distortion of Keys where rolls have overlapped

Better Seal...Smoother surface...
Much Faster operation

This new concept in tube expanders was developed by Elliott to roll the thickest tube sheets. Using a continuous-rolling method, it eliminates many problems common to step-rolling, may be operated protractively or retractively, saves time, assures uniform, smooth surfaces, avoids annular voids or erratic tube inside diameters, provides better seal.

Accessories

Elliott also makes a complete line of retubing accessories, including both electric and air magnetic Tube Rolling Controls, Tube Gages, Tube Plugs, Tube Cutters, etc.—in addition to a complete line of tube expanders. *Ask for Bulletin Y-52.*

ELLIOTT Company
LAGONDA PLANT
SPRINGFIELD, OHIO

Y9-5A

▲ For more details circle NED-752 C on enclosed inquiry slip ▲

New Processes and Materials

POLYETHYLENE TAPE
for sealing, patching, and seaming

Made of polyethylene film, Visqueen PresSure Tape will adhere to almost any film, wood, or metal and can be used in sealing, patching, or seaming operations. Transparent or black tape is available in 2-in. wide, 100-ft rolls mounted in a tear-off container. Special paper backing is stripped off as tape is applied. Tape forms a powerful bond when used on polyethylene film. It is moistureproof and chemically inert. • **Visking Co.**, Plastics Div., 6733 W. 65th St., Chicago 38, Ill.

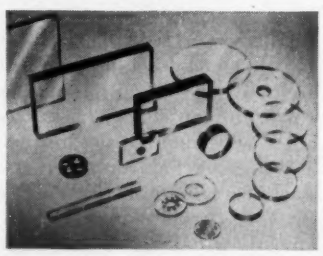
▲ For more details circle NED-753 C on enclosed inquiry slip ▲

HIGH STRENGTH STEELS
nickel alloys have high hardness

Air cooling from heat treating temperatures gives high strength nickel alloy steels yield strengths in excess of 250,000 psi with 6 to 10 per cent elongation and above 20 per cent reduction in area. The family of 25 per cent nickel steels offers a maximum hardness of over 67 Rockwell C. Many of the steels have good cold forming characteristics. Intricate parts can be fabricated to close tolerances in a soft annealed condition, then hardened to the high strength levels without appreciable distortion. Steels can be welded in the hardened condition without preheating. They are readily hot-worked and are available in various commercial shapes. The alloy steels are expected to be commercially available soon. • **International Nickel Co.**, 67 Wall St., New York 5, N. Y.

▲ For more details circle NED-754 C on enclosed inquiry slip ▲

HEAT-RESISTANT GLASS
in 1/8 to 1 1/4-in. thick shapes



Square, rectangular, circular, and odd-shaped borosilicate heat resistant glass products are available in thicknesses from 1/8 to 1 1/4 in. Glass is ground to close tolerances and is available in diameters up to 30 in. and 1728 sq in., and rectangular areas up to 60 x 26 in. Holes from 1 mm to 60 in. diameter can be drilled in the glass. • **Kaufman Glass Co.**, 1209 French St., Wilmington, Del.

▲ For more details circle NED-755 C on enclosed inquiry slip ▲

The answer to your need for LOW-COST CONTINUOUS SEPARATION of TRAMP IRON from fast-moving, deep burdens

CERAMOX V! That's Dings' new, powerful ceramic magnet material which protects machinery and product purity against tramp iron damage. Dings' new ceramic radial-pole Perma Pulleys provide high magnetic strength across entire belt width and greatest removal efficiency at high operating speeds. Other money-saving features . . .

- No operating cost. No wiring or power required
- No maintenance. Unit is automatic
- Quickly and easily installed
- High resistance to demagnetization
- High and prolonged surface strength
- Stainless steel surface for all-weather service

It will pay you to get complete details. Write for information today.

Dings
DINGS MAGNETIC SEPARATOR COMPANY
4758 W. Electric Ave., Milwaukee 46, Wis.

▲ For more details circle NED-756 C on enclosed inquiry slip ▲

...be heard there!

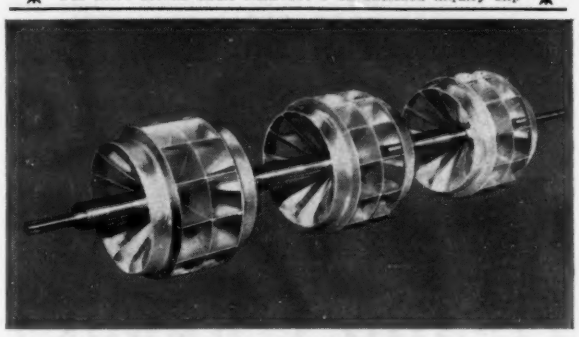
Noise won't bother when you telephone from a "Hear Here" Acousti-Booth. It soaks up machine, traffic and crowd noises before they interfere with clear hearing and distinct speech.

The original doorless booth . . . as always, its *acoustical performance is guaranteed;* construction, top-quality; finish, attractive.

For descriptions and prices ask for Bulletin No. A-142-41

BURGESS-MANNING COMPANY
Architectural Products Division
749 East Park, Libertyville, Ill.

▲ For more details circle NED-757 C on enclosed inquiry slip ▲



ELECTRUNITE Mechanical Tubing eliminates rotor shaft machining

Buffalo Forge Company, Buffalo, New York, saves valuable machining time by using Republic ELECTRUNITE® Mechanical Tubing in manufacturing air conditioning and ventilating units. ELECTRUNITE in sizes 3" to 3 1/4" O.D. 8-gage is used as shafting for the rotors of the blower system.

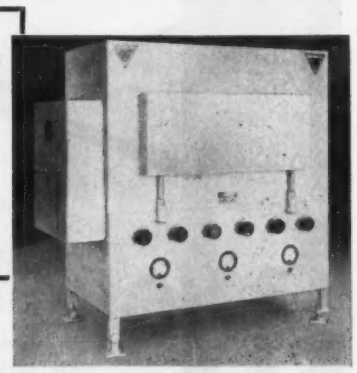
Due to the uniform concentricity of ELECTRUNITE, no rotor shaft machining is required. Shafts are bored at each end and plug inserted for the bearing. With ELECTRUNITE uniformity, only .015 of the stock is removed before the plug is pressed into tube ends.

ELECTRUNITE Tubing, carbon or stainless, may solve your production or cost problems, too. Call your Republic representative, or write direct.

REPUBLIC STEEL
STEEL AND TUBES DIVISION
233 East 131st St. • Cleveland 8, Ohio

▲ For more details circle NED-758 C on enclosed inquiry slip ▲

PERECO rotary TUBE FURNACE



for continuous-flow calcining or sintering

This Model RT-472 tube type unit is typical of a wide range of standard or special Pereco Tube Furnaces built for individual work requirements. It normally operates to a maximum of 2500° F (other temperatures available) and incorporates a 4 1/8" I.D. X 72" long impervious Mullite ceramic tube; a ruggedly constructed gearing mechanism for variable tube rotational speed (0 to 6 rpm); and a simple arrangement for changing the degree of tilt to control the through-rate of powder-like materials of varying grain sizes, from entrance to exit end of tube. This is a quality unit of exceptional efficiency, designed specifically for delicate calcining-sintering processes. More details available on request.

Ask for Pereco for recommendations on standard or special units for operating temperatures from 450° to 5000° F.

Pereny Equipment Co., Inc.
Dept. G, Chambers Road, Columbus 12, Ohio

PERENY EQUIPMENT COLUMBUS OHIO

▲ For more details circle NED-759 C on enclosed inquiry slip ▲

Automation
TO FIT YOUR NEEDS WITH
NATIONAL
INTERVAL TIMERS

The rugged, accurate, and flexible instant reset dial set timer will operate alone for timed interval or time delay or in sequence to control the most complex process cycle . . . synchronous motor driven in 13 timing ranges from 60 cycles full dial to 60 hours . . . in any mounting or enclosure or as a complete center.

Write for Bulletin 203

National Time & Signal Corp.
21800 Wyoming • Detroit 37, Mich.

▲ For more details circle NED-760 C on enclosed inquiry slip ▲

PAYLOADER® system

unloads cars twice as fast

When you have to unload bulk materials from boxcars, there's nothing quite like a Model H-25 "PAYLOADER". But when you have many boxcars — of clay, feldspar and flint — to unload, plus lots of other materials-rehandling work to do, there's nothing like *two* H-25's. That is the experience of Crane Company, Ceramic Division at Trenton, N. J. because, when they substituted the two "PAYLOADER" units for a pneumatic system, they cut their unloading time in half.

The Model H-25 is the most modern, most productive tractor-shovel available for close-quarter work, yet has an operating capacity of 2,500 lbs. It features power-shift transmission, power-steer, power-transfer differential, 40° bucket tip-back and 4,500 lb. bucket breakout force.

For digging, moving, loading and feeding larger tonnages of materials there are bigger "PAYLOADER" sizes, up to 12,000 lb. operating capacity, to fit your needs. And there's a nearby Distributor with complete service-parts facilities, backed by Hough factory service personnel, ready to discuss your "PAYLOADER" requirements. 3-A-3

HOUGH®
THE FRANK G. HOUGH CO.
LIBERTYVILLE, ILLINOIS
SUBSIDIARY — INTERNATIONAL HARVESTER COMPANY

▲ For more details circle NED-761 C on enclosed inquiry slip ▲

New Processes & Materials

DAMP SURFACE ENAMEL
applied over sweating surfaces

All synthetic Super Dampcoat enamel will not support fungus growth, and has very little odor to affect food products or the applicator. It is applied over heavily sweating wall and ceiling surfaces and withstands chemical corrosion. The hard and tough, high gloss retention paint is also non-toxic and resistant to most acids and alkalis. Six colors plus Super White are offered in full gloss; Super White flat and two semigloss finishes are also available. • **Wilbur & Williams Co.**, 650 Pleasant St., Norwood, Mass.

▲ For more details circle NED-762 C on enclosed inquiry slip ▲

EXTREME PRESSURE LUBRICANT
improved lubricity reduces wear

Molykote M-55-Plus molybdenum disulfide lubricant for extreme pressure uses on drills, taps, cold metal forming dies, and punches outperforms its predecessor M-55 on welding-load and wear resistance tests. Lubricant is suitable for slow moving parts under heavy loads and for surfaces which would react to additives. Its improved lubricity and ability to "plate itself out" on metal surfaces suits it for wear reduction applications in sleeve bearings and instrument gears, even though lightly loaded. A colloidal dispersion in mineral oil, lubricant can be used in mist type lubricators and as an additive in drawing oils, tapping compounds, gear oils, and petroleum-base hydraulic fluids. Service range is 0 to 250° F. • **Alpha-Molykote Corp.**, 65 Harvard Ave., Stamford, Conn.

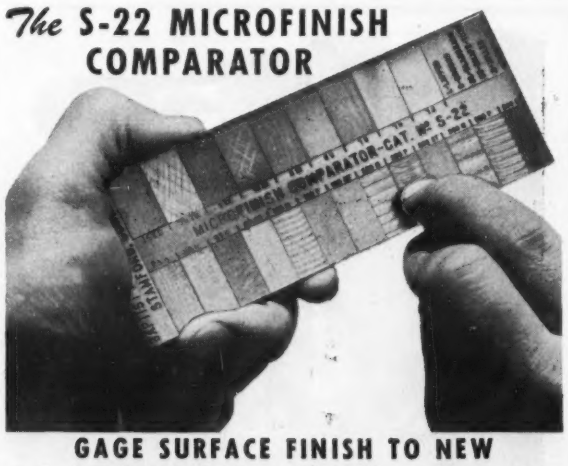
▲ For more details circle NED-763 C on enclosed inquiry slip ▲

BRAZING ALLOYS
contain a vaporizing flux

Vaporizing flux contained in Nicrobraz brazing alloys permits brazing difficult aluminum and titanium-bearing metals in hydrogen and argon atmospheres. Alloys can also be used in any application where atmosphere is marginal. They are available in Standard, 30, 50, 60, 130, 150, and IM designations. They feature optimum wetting and flow by cleaning the base metal ahead of the alloy wetting range. Flux will not attack any known base metal, nor affect any property of the alloy. • **Wall Colmonoy Corp.**, Stainless Processing Div., 19345 John R St., Detroit 3, Mich.

▲ For more details circle NED-764 C on enclosed inquiry slip ▲

The S-22 MICROFINISH COMPARATOR



GAGE SURFACE FINISH TO NEW A.S.A. STANDARDS - *Quickly - Accurately*

This convenient pocket comparator has 22 precision surfaces for specifying and controlling finish to the new A.S.A. Standard B46.1 - 1955. Electroformed in durable corrosion-resistant nickel, the S-22 Comparator provides every department with the most inexpensive method for uniform, accurate control of finish characteristics.
Save valuable time in engineering, inspection, quality control—eliminate costly overfinishing in purchasing and production. $17.50 complete with leather case.
Available from leading industrial distributors, or write

FAIRFIELD DEVELOPMENT LAB., INC.
(SUCCESSOR TO BAPTIST MACHINE CO.)
40 Ludlow Street, Stamford, Conn.

▲ For more details circle NED-765 C on enclosed inquiry slip ▲

EDMONT CASE No. 638: Unloading oily chains from conveyor, ordinary neoprene gloves lasted 5 shifts. Edmont recommended a glove coated with tough neoprene (No. 9402 Super Neox), which wore 15 shifts, reduced glove costs 56%.

Super Neox glove cut costs 56%

No. 9402
Super Neox
Fully coated
knitwrist

In the case above, the job-fitted glove was able to save $4.50 on every dozen pairs used. Because its rough-finished neoprene has positive grip, wet or dry, Super Neox also gave safer, faster work handling. Its improved neoprene compound has remarkable resistance to cuts and snags, as well as industrial solvents, far outwearing both ordinary neoprene and leather.

Free Test Offer to Listed Firms: Tell us your operation. From more than 50 types, we will recommend the correct glove and send samples for on-the-job testing.

Edmont
JOB-FITTED
GLOVES

Edmont Manufacturing Company
1240 Walnut Street, Coshocton, Ohio
In Canada write MSA, Toronto

▲ For more details circle NED-766 C on enclosed inquiry slip ▲

SAVE ON FREIGHT ELEVATORS

TRANE CO., LA CROSSE, WIS. ELEVATOR CAPACITY 12,000 LBS.

Rotary Oildraulic Operation handles capacities to 100,000 lbs. economically

For the shocks and jolts of heavy-duty service, there's no more dependable and economical elevator than the Rotary Oildraulic. It's pushed up and supported from below by a powerful hydraulic plunger that won't "give" with sudden heavy loads. Big elevator problems are solved by Rotary Lift Co. for all of American industry.

- No expensive overhead machinery penthouse
- No cables to inspect and replace periodically
- Lighter shaftway construction
- All adjustments easily made on one control unit
- Consistently smooth, dependable performance
- Easily installed in new or old buildings
- Parts and service available everywhere

Rotary Oildraulic® Elevators
ROTARY LIFT COMPANY
Division of Dover Corporation
Memphis, Tenn. — Chatham, Ontario

Rotary®

MAIL NOW FOR COMPLETE DATA
Rotary Lift Co.
1121 Kentucky,
Memphis 2, Tenn.

Send complete information on ( ) freight, ( ) passenger elevators to:

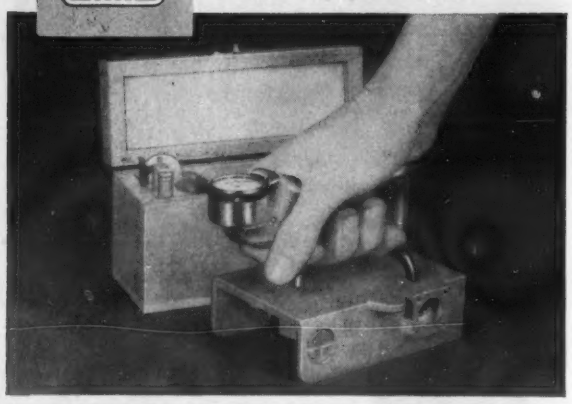
Name_____
Company_____
Address_____

▲ For more details circle NED-767 C on enclosed inquiry slip ▲

THE MARK OF QUALITY
BARBER COLMAN

Impressor

PORTABLE HARDNESS TESTER
- Rapid testing—no setup
- Easy to carry and use
- Needs only space for hand



A portable hardness tester for aluminum alloys, soft metals, and plastics, the Barber-Colman Impressor is designed for fabricated parts and raw stock testing. Operating experience is not essential. The reading is instantly indicated on the convenient dial. No waiting, preloading, or separate measurements. Barber-Colman engineers will gladly recommend the most suitable model for your application. Write today for complete details.

BARBER-COLMAN COMPANY
Dept. C, 1214 Rock Street, Rockford, Illinois

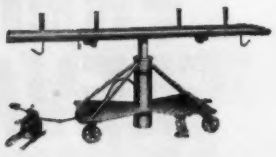
▲ For more details circle NED-768 C on enclosed inquiry slip ▲

RAYMOND

COST CUTTERS

Portable HYDRAULIC elevating table

For die handling, feeding, positioning. Telescopic and non-telescopic models. Cap. 2,000 lbs.



HYDRAULIC sheet feeding table

Keeps sheets, strips at right working level. Increases production, makes jobs safer, easier. Cap. 2,000 lbs.

RAYMOND

Lightweight HYDRAULIC pallet truck

Rugged, maneuverable. 270° turning radius. Separate lift and lower foot pedals. Cap. 2,000 and 3,000 lbs.

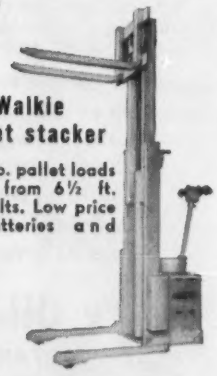
Walkie pallet truck

24 volt power. Three speeds forward or reverse. Low price includes batteries and charger. Cap. 4,000 lbs.

RAYMOND

Walkie platform truck

Operates in narrow aisles and crowded production areas. 24 volts. Low price includes batteries and charger. Cap. 4,000 lbs.



Walkie pallet stacker

Tiers 2,000 lb. pallet loads 10 ft. high from 6½ ft. aisles. 24 volts. Low price includes batteries and charger.

The RAYMOND CORPORATION

4189 Madison St., Greene, N. Y.
Please send bulletins:

SEND FOR FREE BULLETINS

- ☐ Portable Elevating Table
- ☐ Sheet Feeding Table
- ☐ Lightweight Pallet Truck
- ☐ Walkie Pallet Truck
- ☐ Walkie Pallet Stacker
- ☐ Walkie Platform Truck

NAME TITLE
COMPANY
STREET
CITY STATE

▲ For more details circle NED-769 C on enclosed inquiry slip ▲

New Literature and Catalogs

Variable Speed Sheave

T. B. Wood's Sons Co.—Stationary control SVS variable speed sheave for standard V-belts is available with two, three, or four grooves. Illustrated Bulletin 6102 covers its nonfreezing construction, method of installation, easy speed change, and other features. Tables aid in selection. Sure-Grip companion sheaves and Quick-Slide motor bases are also covered.

▲ For more details circle NED-770 C on enclosed inquiry slip ▲

Shim & Gasket Material

General Gasket Inc.—Color-Plast shim and gasket material is impervious to oils and greases, even when boiling hot, will not swell after long use, and withstands high torque loads. Ready-Reference card facilitates selection by color identification of 12 thicknesses from 0.001 to 0.03 in. Sheet sizes are 20 x 50, 10 x 50, and 5 x 50 in.

▲ For more details circle NED-771 C on enclosed inquiry slip ▲

Instrument & Electronic Components

PIC Design Corp.—Technical details, MIL specifications, and drawings of over 12,000 servo, instrument, and electronic items are contained in 416-page Master Catalog 21. Covered are precision gears, shafts, speed reducers, magnetic clutches, differentials, instrument plates, tool parts, and many other components.

▲ For more details circle NED-772 C on enclosed inquiry slip ▲

Ovens, Dryers, Heaters & Curing Systems

Midland-Ross Corp., J. O. Ross Engineering Div.—Condensed data and case histories on such air processing equipment as ovens, dryers, air heaters, and curing systems are content of 12-page Bulletin S-5. They are used in pulp and paper, paint finishing, rubber, foundry, plastic, and chemical processing industries.

▲ For more details circle NED-773 C on enclosed inquiry slip ▲

Compressed Air Products

Wilkerson Corp.—Cover and index of 24-page Catalog 158 of compressed air products has a color code for air line filters, regulators, lubricators, and drains which aids in finding the representative section inside. Photos, functional data, explanation of operation, air flow diagrams, and specifications are given for each product.

▲ For more details circle NED-774 C on enclosed inquiry slip ▲

Speed Reducers

Perfection Gear Co., American Stock Gear Div.—Nine series of speed reducers with ratios from 5:1 to 60:1 and capacities from 1/6 to 5 hp are detailed with illustrations, charts, and tables in 28-page Catalog M-140. Units are of motorized and flanged types.

▲ For more details circle NED-775 C on enclosed inquiry slip ▲

The OFFICE VALET® Lockerette

Combines the best features of both lockers and coat racks.

Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in dark lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Improves health and morale—lower absenteeism.

Lockerettes save space too . . . the No. 6-12 (2-column) accommodates 12 people in 6 feet; the No. 9-18 (illustrated) accommodates 18 in 9 feet.

No. UM-4 Umbrella Rack

WRITE FOR BULLETIN LO- 8

VOGEL-PETERSON CO. Rt. 83 & Madison St. Elmhurst, Illinois

▲ For more details circle NED-776 C on enclosed inquiry slip ▲

toughest scoops and shovels *made*

WOOD'S Moly BRAND

Mo-lyb-den-um alloy-blades

Pat. Steel I-Beam Prevents Handle Breakage

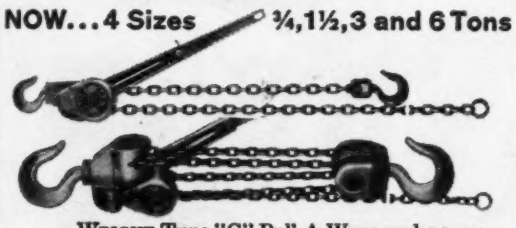
Workers like them for hang, balance, and perfect finish . . . and they last 2 to 3 times as long as other grades. Blades guaranteed uniform gauge, hardness, and tensile strength. Guaranteed not to split or crack. Guaranteed uniform quality 12 to the dozen. Cheapest shovels you can buy for long hard service, and workers take care of tools they like.

THE WOOD SHOVEL & TOOL CO.
Piqua, Ohio

▲ For more details circle NED-777 C on enclosed inquiry slip ▲

New ¾-ton Type "C" Pull-A-Way

NOW... 4 Sizes ¾, 1½, 3 and 6 Tons



WRIGHT Type "C" Pull-A-Ways make easy work of hundreds of quick hook-up jobs. Now available in four sizes—¾, 1½, 3 and 6 ton—Type "C" Pull-A-Ways are portable, safe and rugged. Corrosion-resistant modern aluminum alloy castings are used for gear case, handle and covers of all models. Hooks, load chain and chain sheave are made of alloy steel. Positive, dependable load brake securely holds load at any point. Lubricated for life. Weights: ¾-ton, 14 lbs; 1½-ton, 23½ lbs; 3-ton, 36½ lbs; 6-ton, 63 lbs.

Write to our York, Pa., office for Bulletin DH-56A

WRIGHT HOISTS

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

▲ For more details circle NED-778 C on enclosed inquiry slip ▲

TOKHEIM High-Vacuum

HAND PUMPS

for industrial liquids

Here's an all 'round utility pump that saves much more than its cost in speeding production, improving housekeeping, preventing waste. Eliminates slippery floors and liquid accumulation so often the cause of fire and accidents. Delivers 20 gallons per 100 back and forth strokes. Pumps oil and many other liquids. (Write for approved list.) Has hose or spout outlet. Call your dealer, your Tokheim representative, or write factory.

General Products Division
TOKHEIM CORPORATION
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1656 Wabash Ave. Fort Wayne 1, Ind.

Subsidiaries: Tokheim N.V., Leiden, Holland — GenPro, Inc., Shelbyville, Ind.
Factory Branch: 475 Ninth Street, San Francisco 3, California
In Canada: Tokheim-Reeder of Canada, Ltd., 205 Yonge St., Toronto, Ont.

▲ For more details circle NED-779 C on enclosed inquiry slip ▲

Versatile PORTER CUTTERS—there are over 100 different models and sizes — hand or power operated. They save you man-hours, man-power, and money, too! The PORTER CUTTER catalog gives you illustrated, descriptive details! Send for your copy TODAY!

For prompt service contact your Industrial Supply Distributor . . . and write today for your free PORTER CUTTER CATALOG!

CUT — up to ¾" rods with HAND OPERATED TOOLS — up to 1⅜" rods and 2½" power cable with POWER OPERATED TOOLS.

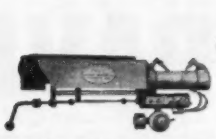
H. K. PORTER, INC. Somerville 43, Mass.

▲ For more details circle NED-780 C on enclosed inquiry slip ▲

*Anything you need in a **drill press feed . . .**

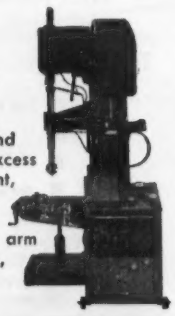
BECKETT HAS IT!

ELECTRICALLY CONTROLLED AIR FEEDS. Drilling and Drilling-Tapping Models. Beckett electrically controlled feeds provide proper thrust and correct drilling/tapping action for work in almost any material. Drilling-tapping models will tap direct from drill chuck, eliminating tapping heads, clutches, leadscrews, etc. Standard duty model has 2½" stroke and 740 lbs. max. thrust; heavy-duty model has 4" stroke and 1250 lbs. max. thrust, on 1¼" pinion shaft at 100 psi air pressure.



MECHANICALLY (manually) CONTROLLED AIR FEED for drilling operations has same sensitive drilling action as electric feeds. Action is controlled by manually activating precision Beckett Hi-Cyclic Air Valve. Standard and heavy-duty models have same stroke and max. thrust as electric models described above. Super-accurate depth control and automatic dwell.

GEARED HEAD AIR FEEDS. Mechanically or electrically controlled. Beckett Geared Air Feeds provide either greater drill point thrust with shorter stroke, or a longer stroke at reduced thrust, than the feeds described above, *without adding to length of power transmission arm.* Outside gears are pick-off type and interchangeable. Stroke and thrust can range from 8" stroke at 625 lbs. max. thrust, to 2" stroke at 2500 lbs. max. thrust, on 1¼" pinion shaft at 100 psi.



HYDRAULIC FEEDS FOR AUTOMATING LARGER DRILL PRESSES.
Here is a complete hydraulic power package that can be *tailored* to your drill presses and your work requirements. Drill point thrust in excess of 5000 lbs. is obtainable on most equipment, as are approach speeds of 1" per sec. Feed speed is infinitely variable. Unit consists of heavy-duty power transmission arm and portable console housing control valves, hydraulic pump and tank.

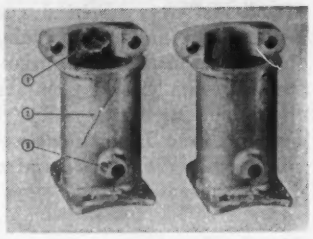
GET FULL DETAILS TODAY. WRITE FOR NEW CATALOG FM-60. NFPA MEMBER

BECKETT-HARCUM CO.
991 W. LOCUST STREET, WILMINGTON, OHIO

▲ For more details circle NED-781 C on enclosed inquiry slip ▲

New Processes & Materials

PLASTIC SEALER-FILLER
repairs cracks, holes in castings



Used instead of cold solder or other standard fillers, BondZall plastic sealer-filler is used to repair blow holes (1), fatigue cracks (2), tears, cuts, broken shoulders (3), and dents in castings. Ridges left on burned plate by cutting torches can be filled, sealed, rounded out and built up with the plastic. Repairs are permanent, will not rust, disintegrate or corrode, and can be sawed, sanded, finished, and painted. Impact strength is high. Photo shows rejected casting at left and repaired at right. • **Fybrglas Industries, Inc.,** 3010 Montrose Ave., Chicago 18, Ill.

▲ For more details circle NED-782 C on enclosed inquiry slip ▲

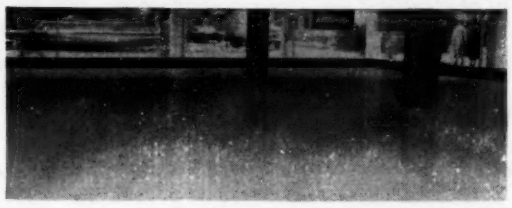
RUBBER SHEET STOCK
resists strong fluids at high heats

Increased resistance to strong fluids at high temperatures plus increased service life is exhibited by Cohrlastic 975 Viton rubber sheet. Material, a 75 durometer stock, resists carbon tetrachloride, benzene, and most mineral acids, as well as missile and aircraft fuels, oils, and lubricants. Heat aging tests in the 500 to 600° F range show improved elongation retention and less hardness change. Rubber is stocked in 12 x 12 and 24 x 24-in. molded sheets in 1/32, 1/16, 3/32, 3/16, and ⅛ in. thicknesses. Over ⅛ in. thick, material is made to order. • **Connecticut Hard Rubber Co.,** 407 East St., New Haven 9, Conn.

▲ For more details circle NED-783 C on enclosed inquiry slip ▲

CONCRETE FLOOR TREATMENT
cures, seals, and dustproofs

Newly poured concrete floors can be cured, hardened, sealed, and dustproofed with one application of clear, ready-to-use Dekote. The liquid solution can be



spray, roller, or brush applied and effectively seals the floor against most acids, oils, greases, and other foreign materials. It does not have to be removed before secondary floor treatments, and after a normal curing period of 28 days, paints, tile, or linoleum can be applied directly to the surface. • **Tretol, Inc.,** 7252 W. 66th St., Chicago 38, Ill.

▲ For more details circle NED-784 C on enclosed inquiry slip ▲

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free 84-PAGE CATALOG

One Complete Source of Detailed Specifications for Designers, Production Managers, Toolroom Foremen

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ALL NEW — Complete specifications and cost saving data on over 2000 "Standards", including world's largest line of work-holding equipment, chuck jaw blanks, handles, knobs, wheels, strap clamp assemblies, forged items, plus hundreds of other jig and fixture components. Detailed specifications, engineering drawings. The one complete source for data on all the "standards" for tool, die, jig, and fixture design and application. Write for your FREE copy today.

JERGENS TOOL SPECIALTY CO.
Dept. NE-3 712 E. 163rd St., Cleveland 10, Ohio

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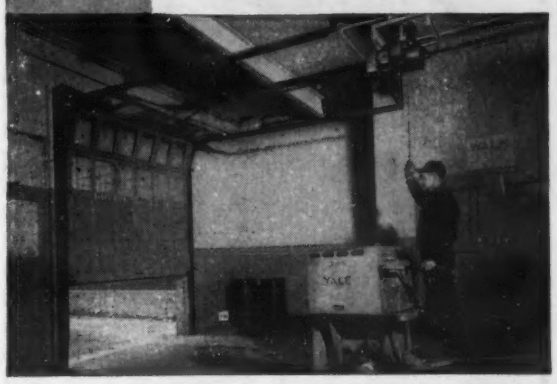
THE MARK OF QUALITY BARBER COLMAN

DOOR OPERATORS
Pull switch saves man-hours and heat



Ask for Savings Bulletin

Open-door time is minimized, traffic kept moving. Also available with radio control installed on trucks. New booklet and computation show *how much* Barcol features save. Barber-Colman makes operators for overhead, swinging or sliding doors, and sliding gates. Your Barcol distributor sells, installs, guarantees, and services — look under "Doors" in phone book.

See catalog 7c/8a Sweet's Plant Engineering File.

BARBER-COLMAN COMPANY
Dept. S-03 ROCKFORD, ILLINOIS

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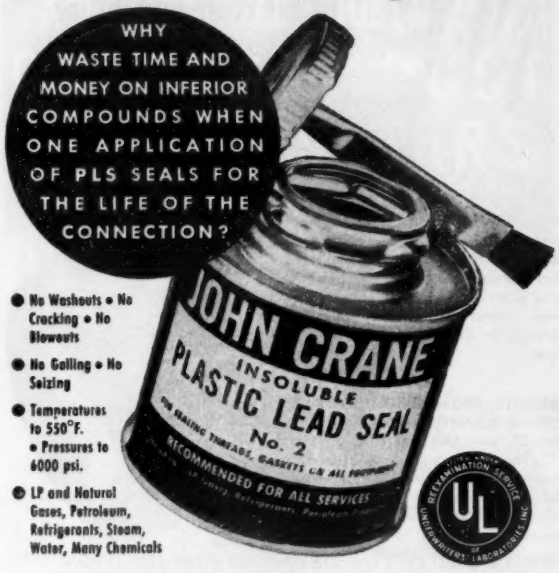
Sure Cure for Leaky Joints



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CRANE PACKING COMPANY

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with TRERICE
DIAL THERMOMETERS

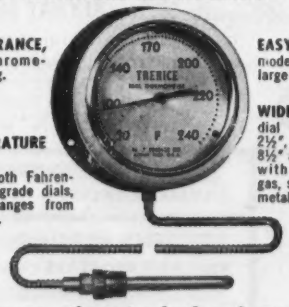
If you are after precise, dependable temperature indication, take a close look at these high-quality features of Trerice dial thermometers!

NEAT APPEARANCE, distinctive chrome-plated dial ring.

EASY TO READ, modern aluminum dial, large figures.

WIDE VARIETY, dial available in 2", 2½", 3½", 4½", 6", 8½" and 12" diameters with mercury, vapor, gas, solid liquid or bi-metal actuation.

WIDE TEMPERATURE RANGES, available in both Fahrenheit and Centigrade dials, temperature ranges from -100° to 1000°F.



All the many other standard and special option features of Trerice dial thermometers are contained in Bulletin No. 500-M. Write for your copy.

Send Bulletin 500-M.
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H. O. TRERICE CO. 1424 W. Lafayette Blvd. Detroit 16, Michigan

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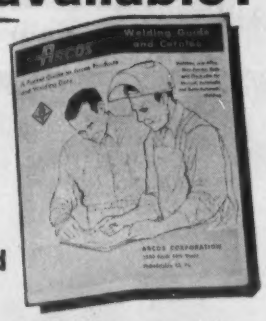

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Nothing like it! Pocket size. Complete data on selection of rods and electrodes for welding stainless, low alloy, non-ferrous and light metals. Gives facts on applications, currents, preheating, annealing, AWS/ASTM classifications. Special sections on How to Get Better Stainless Welds, and Effect of Alloying Elements on Weld Metal. Comprehensive list of valuable technical data available. FOR FREE COPY write ARCOS CORPORATION, 1500 South 50th Street, Philadelphia 43, Pa.

ARCOS | Filler Metal Specialists

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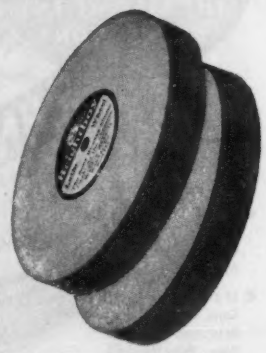
NEW

AN EXCEPTIONAL DEVELOPMENT IN THE COMPOUNDING OF RUBBER CUSHIONED ABRASIVES

Semi-Firm Binder
Brightboy GB

New GB rounds out the Brightboy line—the only complete, comprehensive STOCK line of multi-use soft rubber bonded abrasives which brings you a revolutionary concept of finishing; *time saving operations not previously associated with abrasive uses.*



BENEFIT FROM BRIGHTBOY'S 49 STOCK COMPOUNDS: 4 basic binders: ST, Soft; GB, Semi-Firm; BL, Firm; TT, Tough. *6 grain sizes from extra coarse to extra fine, 2 grain types,* Silicon Carbide and Aluminum Oxide. And Fine-Tex, compounded with pumice abrasive.

WRITE TODAY FOR DETAILED INFORMATION AND APPLICATION SUGGESTIONS.

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BRIGHTBOY INDUSTRIAL DIV.
WELDON ROBERTS RUBBER CO.
95 North 13th Street
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America's Pioneer Manufacturer of Rubber-Bonded Abrasives

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Why pay for "SPECIALS" when you can get these STANDARD BROACHES from STOCK

Minute Man KEYWAY BROACH KIT

In one minute and for as little as one cent you can cut a keyway with the Minute Man Keyway Broach Kit. For keyways from 1/16" to 1" in any bore from 1/4" to 3".

SAVE WITH THESE OTHER STANDARD STOCK BROACHES

SQUARE BROACHES — 1/8" to 3/4" holes

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▲ For more details circle NED-791 C on enclosed inquiry slip ▲

New Literature & Catalogs

Handbook of Saw Blades

Ladish Co.—Handy pocket-size 36-page "Saw Blade Handbook" is a practical guide to maximum cutting performance and blade life. It shows how to select the proper blade, and correct feed, speed and tension for every material. Common cutting problems and their solutions are presented, along with recommendations on procedures and sizes and types of blades for cutting various metallic and nonmetallic materials.

▲ For more details circle NED-792 C on enclosed inquiry slip ▲

Air Gaging Instruments

Dearborn Gage Co., Air Gage Div.—Complete specifications and price data on expanded line of Dearbornaire air gaging instruments, elements and related equipment are contained in 16-page catalog and price list. Single and multiple column air gages featured have a new Multi-Amp tube which permits conversion from one amplification to another by changing calibrated scales.

▲ For more details circle NED-793 C on enclosed inquiry slip ▲

Impervious Graphite Process Equipment

Falls Industries, Inc.—Latest impervious graphite processing equipment covered in revised 32-page Bulletin 249-2 include Parallel and Modular exchangers, valves, crucibles, thermowells, and both armored and nonarmored pipe and fittings. Entitled "Data for Cost Estimation," booklet gives approximate cost per square foot of heat transfer area for exchangers and other equipment.

▲ For more details circle NED-794 C on enclosed inquiry slip ▲

Machine Tool Control Systems

True-Trace Corp.—Hydraulic tracer control systems for one, two, and three-dimensional applications on machine tools are described in illustrated 4-page Bulletin SB-2. Synchro-Trace automatic programmed 3-D duplicating system, 45-degree lathe tracer attachment, and pivot type lathe tracer attachment are also covered.

▲ For more details circle NED-795 C on enclosed inquiry slip ▲

Collets, Pushers & Cams

Modern Collet & Machine Co.—Illustrations in 24-page Catalog 59 demonstrate the sizes and types of collets, pushers, and cams available from stock. Specification tables are included, along with details of the collets, pushers, or cams used with many standard machines. Prices are given.

▲ For more details circle NED-796 C on enclosed inquiry slip ▲

Air, Grease & Oil Couplers

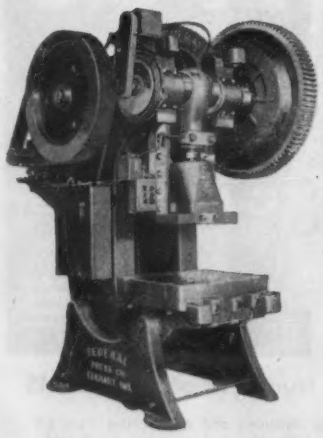
Foster Mfg. Co.—Quick-detachable air, oil, and grease line couplers described in 20-page catalog are offered in automatic, semiautomatic, and regular types. Specifications and advantages of each type are given. Also included is information on chrome sleeve fittings, couplers, hose, and three-way sleeve valves.

▲ For more details circle NED-797 C on enclosed inquiry slip ▲

FEDERAL gives you

Cost-cutting Automation

—eliminates specialized, more costly equipment!



Case histories prove that you can step up production many times—cut tooling and production costs substantially with a Federal. Choose from:

AIR CLUTCH PRESSES • DIAL FEED PRESSES • STANDARD PRESSES • SPECIAL PRESSES

Federal assures you of the finest workmanship—the best features—Meehanite Iron castings—over-sized crankshafts, Timken bearings, solid, web-type flywheels, symmetrical rams, plus longer "V" ways and gibs.

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34 Years of Quality Construction

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HIGH PRESSURE WASHERS

IS YOUR CLEANING PROBLEM ONE OF THESE...OR SIMILAR?

- Processing tanks
- Metal rust or scale
- Heat exchanger tubes
- Boxcar interiors
- Cement trucks
- Animal carcasses
- Food plant floors
- Chemical residues

One man with AQUABLAST equals a crew of men using ordinary water pressures. The important difference is that water, discharged at 600 lbs. pressure from an Aquablast gun, cuts through caked dirt, hardened deposits, gummy residues or accumulated grime like magic! John Bean Aquablast Washers are complete, motor driven pumping units for use with 1 to 3 guns.

Send information request form — today!

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MASTIPAVE

Random scattered vinyl chips add a colorful decorative effect to rugged, low-cost Pabco Mastipave. And make maintenance even easier than before! That's new Deco Tread Mastipave. Lay it anywhere without surface preparation. Also available: regular Mastipave and non-slip Grip Tread Mastipave.

FREE ILLUSTRATED BOOKLET!

Send for a free informative booklet with case histories and technical data. Pabco Mastipave, Fibreboard Paper Products Corp., 475 Brannan St., San Francisco

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CUT VIBRATOR MAINTENANCE up to 80%

with Navco's "One-Piece"* Trouble-Free Construction

- No Body Ass'y Bolts to Shear or Stretch
- No Housing Springs to Replace
- No Separate Striking Plate to Leak Air
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Navco "Long-Stroke" vibrators dislodge arched materials with a timed impact—don't pack them as do high frequency vibrators. Complete line of Navco "one-piece" air vibrators for bins, hoppers, chutes, R.R. cars, concrete forms, and batching.

FREE CATALOG—*Detailed information on models and applications. Write Dept. D-3*

*Patented

NAVCO® NATIONAL AIR VIBRATOR CO.
435 Literary Ave., Cleveland 13, Ohio

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Outstanding Accuracy

PALMER

MODEL 1035

DIAL THERMOMETER

FULL 3½" DIAL FACE

Check these functional features

- Direct-drive Bourdon Coil with a filled system for longer lasting accuracy.
- Stem can be placed at any desired angle and case can be rotated to most readable position.
- External calibration for zero setting.
- Unaffected by stem alignment.
- Accurate to one scale division.
- No sticking at any temperature.
- Non-corrosive case.

Find Your Palmer Representative in The "Yellow Pages"

FITS ALL BI-METALLIC WELLS

Stem can be placed at any desired angle and case can be rotated to most readable position.

Write for Free Bulletin 1035 for complete description and prices.

PALMER THERMOMETERS, INC.
Mfrs. of Industrial Laboratory, Recording and Dial Thermometers
2515 Norwood Ave., Cincinnati 12, O.

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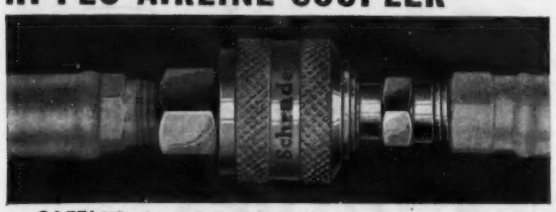
NEW! SCHRADER INDUSTRY INTERCHANGEABLE HI-FLO AIRLINE COUPLER

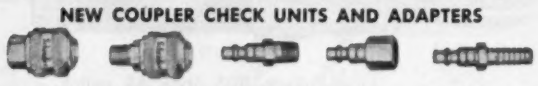


SAFE! Won't open accidentally, even when dragged, or snarled on machinery. Heavily knurled coupler connects or disconnects in single upstream push or pull, with one hand, even if gloved or greasy.

FEATURES! Fastest airflow . . . non-corrosive . . . case hardened steel all through . . . meets and exceeds mil specs . . . engineered for easy replacement of parts in field.

IMPORTANT! Interchangeable with others of similar types. Variety of end fitting styles available. Your distributor has them now.

NEW COUPLER CHECK UNITS AND ADAPTERS



#5138-12-¼ N.P. Female | #5139-12-¼ N.P. #5140-12-⅜ N.P. Male | #5138-11-¼ N.P. Male | #5139-11-¼ N.P. Female | #5140-11- Serrated Shank FOR ⅜ I.D. HOSE

Schrader a division of SCOVILL

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459 Vanderbilt Ave., Brooklyn 38, N. Y.
QUALITY AIR CONTROL PRODUCTS

▲ For more details circle NED-803 C on enclosed inquiry slip ▲

Precision Saw With Air Clamps Makes Clean Cuts..Reduces Waste & Machining

With this new Ty-Sa-Man 144-BD Saw, adjustable air clamps hold metal down while the saw travels down the machined transverse rail, delivering cuts with smooth edges to amazing tolerances. Cut parallel strips . . . handle difficult jig fixture work with this self-contained saw which has its own integral cooling system and tank. Among its features are a calibrated guide fence, infinite variable speed from zero to twenty FPM, push-button control and 15 HP motor.

FREE BROCHURE
TY-SA-MAN Machine Co., Inc.
550 White Ave., Knoxville, Tenn.

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New Processes & Materials

OIL RESISTANT PAPER
for packaging oiled metal parts

Patapar Oil Barrier parchment resists the penetration of oils and solvents and can thus be used for packaging oiled metal parts. White in color, paper prevents oils from spreading along its surface. It is a lightweight vegetable parchment that can be glued with conventional adhesives, easily printed, and adapted to package converting operations. Paper can be used as a greaseproof liner for containers, as an outside label or wrapper, as a top sheet for forms exposed to oily conditions, as an instruction insert, and in sheet, bag, or envelope form for packaging oily items. Weight is 35 lb for 500 sheets measuring 24 x 36 in. • **Paterson Parchment Paper Co.**, Bristol, Pa.

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ANTIRUST PAINTS
three primers and two finish paints

Three primers are included in five antirust paints developed for any metal finishing job. These are a red lead version for iron, steel, or tin surfaces; a zinc chromate formulation for indoor or outdoor iron, steel, tin, and aluminum surfaces; and a galvanized metal primer which thins with water and dries in 30 min. A low sheen, jet black finish and a brilliant aluminum finish round out the line. All primers are formulated for top-coating with Duco enamel colors. • **E. I. du Pont de Nemours & Co.**, Finishes Div., Room 8033-D, Wilmington 98, Del.

▲ For more details circle NED-806 C on enclosed inquiry slip ▲

INDUSTRIAL CLEANERS
four products tailored to metal use

Cerfa-Kleen production cleaners are tailored to the exact requirements of four basic industrial metal cleaning processes. HPW (hot power washer) heavy duty cleaning compound is nonfoaming, noncaking, and incorporates a rust preventive. CPW (cold power washer), a mild, fast-dissolving alkali formulation, is usable at room temperature; is nonfoaming, noncaking, nondusting; and has rust preventive and water softener added. High detergency compound HST (hot soak tank) for fast immersion cleaning in hard water is also noncaking and nondusting. Concentrated liquid CST (cold soak tank) will replace toxic or flammable solvents and can be used for wipe-off, tumbling, and other mechanical cleaning operations. Compounds have no free caustics. • **E. F. Houghton & Co.**, 303 W. Lehigh Ave., Philadelphia 33, Pa.

▲ For more details circle NED-807 C on enclosed inquiry slip ▲

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cool, safe light... right where you need it!

- Ideal lamp for benches, machine tools, assembly lines.
- Instantly adjusts to any desired position.

New, friction-collar-disc joints permit instant positioning . . . light stays put under severe vibration. Nylon Koolshield snaps over reflector . . . remains cool to the touch. Universal base, rugged construction, heavy duty socket, Levolier switch.

Write for catalog of Localites for every industrial need.

Available through wholesalers everywhere.

FOSTORIA CORPORATION
FOSTORIA, OHIO

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Franklin NEW GEAR-O-MATIC MOTORS for . . .

- GARAGE DOORS
- VENTILATORS
- INDEXING TABLES
- SLIDING DOORS
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An instant-reversing, geared motor controlled by built-in adjustable limit switches . . . and featuring an automatic safety device which instantly reverses the motor rotation when a predetermined force resists the motion of the driven product.

✓ INSTANT, HI-TORQUE REVERSING
✓ MANUAL OR FULLY AUTOMATIC
✓ WORM GEAR REDUCTION

Write for "FACTS ABOUT GEAR-O-MATIC®"

FRANKLIN ELECTRIC
Franklin Electric Co., Inc.
BLUFFTON, INDIANA

▲ For more details circle NED-809 C on enclosed inquiry slip ▲

New DAY "RJ" Dust Filter CONTROLS DUST SAVES DOLLARS

Because of its new, simplified design the DAY "RJ" dust filter will save you many dollars on initial investment, installation, operation and maintenance. Some of the important new construction features of this dust filter are: a new, quick-opening reverse-air, counter-flow valve for maintaining filter media porosity; a new, reverse-air pressure blower arrangement, and new, air tight, yet quickly opened inspection doors.

This patented DAY dust filter has only 3 moving parts but controls dust effectively, efficiently (99.99+%) and economically. It represents the latest refinement in a long-tested, plant-proven dust filter. Using felted filter sleeves to capture dust, the "RJ" is now available in 5 sizes for handling from 300 to 6400 CFM of air (for larger capacities, multiple groupings are furnished).

For more detailed information write toDAY for free Bulletin G-30. It's filled with facts, specifications and dimensions.

The DAY Company

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MADE and SOLD in CANADA by The DAY Company of Canada, Ltd., Rexdale (Toronto), Ontario, Canada, Fort William, Ontario, Canada, Rexdale, Cherry 1-8589

Representatives in Principal Cities

EXPERIENCE ENGINEERED . . . LABORATORY TESTED . . . PLANT PROVEN
Dust Control • Pneumatic Conveying • Bulk Storage
EQUIPMENT . . . SYSTEMS . . . INSTALLATION

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DETROIT TYNISWITCH

SHOWN ACTUAL SIZE
LENGTH 1-3/16"—WIDTH 7/16"—DEPTH 17/32"

MILLIONS OF CYCLES

Class 4 TyniSwitches are made in three types—with ratings up to 15 amps. Two types are designed to provide sure, precise action with a mechanical life in the millions of cycles. One is recommended where switch life requirements are less than 500,000 cycles. Performance is outstanding on motor loads and where shock and vibration is a problem. They are side mounted, top actuated with a wide variety of actuators and terminals. Underwriters' Laboratories listed. Write today for full information. Detroit Controls, 5900 Trumbull, Detroit 8, Michigan.

AMERICAN-Standard
DETROIT CONTROLS DIVISION

▲ For more details circle NED-811 C on enclosed inquiry slip ▲

NEW FROM PFAUDLER

Glasteel pipe you can field-cut

Here's a new, rugged, corrosion-resistant Glasteel pipe that you can cut to any length you want with a standard, dry abrasive cutoff wheel.

It's Pfaudler F-C (for "field-cut") pipe.* Once you cut the length you want, you thread, fire-polish and then finish with a belt-sander to provide a flat gasket seat.

Outside, the pipe is steel for strength; inside you have a 1/8 inch thick borosilicate glass lining that stands up to all acids (except HF) to 350° F. and to most mild alkalies at moderate temperatures. You can also use this pipe with abrasive fluids, sticky materials, and those you want to protect from contamination.

Pipe is rated at 150 psi and comes in 1½, 2 and 3 inch diameters, in lengths through 10 feet.

For Bulletin No. 989 write to our Pfaudler Division, NED30, Rochester 3, N. Y.

*Patent applied for

PFAUDLER PERMUTIT INC.
Specialists in FLUIDICS . . . the science of fluid processes

▲ For more details circle NED-812 C on enclosed inquiry slip ▲

STITCHES OF STEEL
for greater flexibility

CLIPPER fasteners give versatility to flat belting

Clipper Stitches of Steel answer the engineer's dream of having an endless belt that always fits . . . that still can be installed without dismantling the machine. Clipper fasteners produce a belt joint so smooth and durable it operates well on both small and large diameter rollers. Here are some of the advantages:

- Slashes belt installation and replacement time.
- Enables easy take-up of slack belts.
- Requires only a fraction of the time for vulcanizing.
- Smooth and durable as the belt itself.
- Withstands adverse operating conditions.

Send today for Clipper's "5-Company Report on Fastening Methods". Ask for Bulletin 259.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY
976 Front Ave., N. W., Grand Rapids, Michigan

▲ For more details circle NED-813 C on enclosed inquiry slip ▲

New Literature & Catalogs

Guidance for Supervisors

Elliott Service Co.—Multiple-pocket brochure is filled with samples of literature and guidance which make up a management course for supervisors, foremen, and department heads to aid them in developing and maintaining a high degree of supervisory competence. Case studies, newsletters, and problem solutions are contents of 34 bulletins which promote effective communication, cost control, accident prevention, quality and service, job instruction, and methods improvement. Six Motivation studies deal with getting along with people and include group discussion plans. Six Career Profiles stimulate management. Ask for "Guidance That Pays."

▲ For more details circle NED-814 C on enclosed inquiry slip ▲

Printed Circuit Connectors

Standard types of printed circuit connectors are available with 10, 15, 18, and 22 contacts; special series units have 4 to 46 contacts. A 36-page illustrated catalog covering standard card receptacles, terminal strips, contact strips, and miniature Series EC coaxial connectors also includes 12 pages of design and engineering data. Request on company letterhead from Burndy Corp., H. H. Buggie Div., Toledo 1, Ohio.

▲ For more details circle NED-815 C on enclosed inquiry slip ▲

Electric Motor Controls

Furnas Electric Co.—"Quick selector" charts in 72-page motor control Catalog 5900 give horsepower, motor speed, heater size and ampere ratings, enclosure choices, and prices for magnetic and manual motor starters. Ordering instructions and other data for drum controllers, pressure switches, pilot devices, and other motor control products and accessories are also among contents.

▲ For more details circle NED-816 C on enclosed inquiry slip ▲

Proper Grouting Practices

Master Builders Co.—Shrinkage is the principal cause of grout failure. How to avoid shrinkage through use of properly applied Embeco non-shrink grout is subject of 16-page Bulletin E-ld. It outlines common methods of grouting different types of equipment, the mixing and placing of grout, and cold and hot weather grouting. Data on recommended mixes and estimating tables are included.

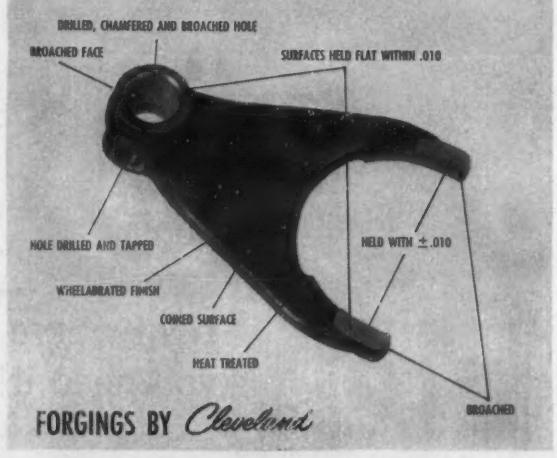
▲ For more details circle NED-817 C on enclosed inquiry slip ▲

Resistance Wire Coiling

Hoskins Mfg. Co.—"Aids to Better Coiling" is title of 16-page manual describing basic factors involved in forming nickel-chromium resistance wire into helically coiled electric heating elements. Work hardening, wire temper, coiling tension, and related variables are considered. Hand coiling is shown step by step. Troubleshooting chart helps diagnose and correct causes of defective coil production.

▲ For more details circle NED-818 C on enclosed inquiry slip ▲

PRINT-TO-PRODUCT SERVICE



FORGINGS BY Cleveland

How many of these steps does your product need?

If you can use skills and close tolerances like these, write for information to *Forge & Fittings Division, H. K. Porter Company, Inc., 3270 East 79th Street, Cleveland 4, Ohio.*

FROM A SINGLE SOURCE:
FORGINGS . . . Hammer, Press, Upset
MACHINING . . . Broaching, Milling, Turning, Drilling, Grinding
FINISHING . . . Heat Treating, Assembling, Painting, Plating

FORGE & FITTINGS DIVISION PORTER H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with 14 DIVISIONS including: Thermoid, Delta-Star Electric, National Electric, Peerless Electric, Riverside-Alloy Metal, Refractories, Connors Steel, Vulcan-Kidd Steel, Forge and Fittings, Disston, Leschen Wire Rope, Mouldings, H. K. Porter Company de Mexico, S. A., and H. K. Porter Company (Canada) Ltd.

▲ For more details circle NED-819 C on enclosed inquiry slip ▲

NOW 4 VISUAL AIDS IN 1

New Chart-Pak Easel makes all presentations easier, more effective

now only $49.95

Dealers throughout U. S. and Canada listed in "Yellow Pages" under "Charts—Business," "Art Supplies" and "Drafting Supplies" or write:

*Magnetic Panel and Pad Extra

- Has large green chalkboard!
- Adjustable in height from 45" to 70".
- Sturdy lightweight aluminum — weighs only 14 lbs.
- Sets up in moments (no tools needed) . . . really portable.
- Never walks or jiggles when written upon.
- Free pointer, eraser and chalk.
- Chart Gripper. • Pad Clamp.
- Detachable Tray.
- 2-way adjustable rear leg.
- Aluminum Panel Easel also available.

CHART-PAK, INC.
ORIGINATOR OF THE TAPE METHOD OF DRAFTING
383 River Road, Leeds, Mass.
Dealer Inquiries Invited

▲ For more details circle NED-820 C on enclosed inquiry slip ▲

Rugged Foot Switches

A-B QUALITY

Bulletin 805 Style AS switch with hood completely covering both top and sides.

This A-B foot switch—the Bulletin 805—is built for the tough jobs. The sturdy, die-cast aluminum housing has an extended base to prevent tipping—the switch does not have to be bolted down. Double break, snap-action, silver contacts never need service attention of any kind.

The contact trip point is easily adjustable and, when equipped with two contact blocks, can be set for simultaneous or two-stage operation. Latch—shown in picture—can be supplied for maintained contact operation. Available in NEMA Type 4 watertight and oiltight applications and Type 7 explosion-proof service. Send for complete information today.

Bulletin 805 Style AG switch with top guard.

Bulletin 805 Style A without foot protection.

Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY
Member of NEMA
Quality MOTOR CONTROL

▲ For more details circle NED-821 C on enclosed inquiry slip ▲

HOW TO ENGINEER SPECIFY ORDER PRICE...

HYDRAULIC CYLINDERS

Here is complete engineering data on Hannifin's newest line of hydraulic cylinders. Every mounting style is fully dimensioned in all sizes. Standard models or special modifications are made easy to specify. The price sheet, too, is easy to understand, easy to use.

Write for Bulletin 113-B.

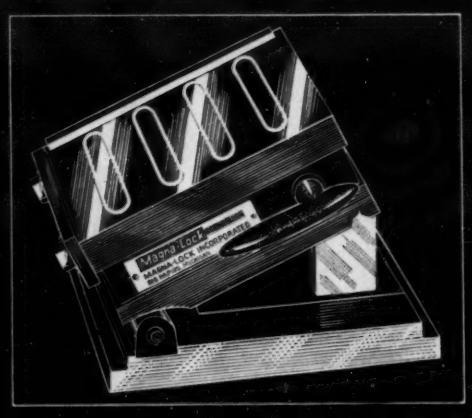
HANNIFIN

Hannifin Company, 527 South Wolf Road, Des Plaines, Ill.

(Hannifin Company is a division of Parker-Hannifin Corporation)

▲ For more details circle NED-822 C on enclosed inquiry slip ▲

PRECISION ANGULAR SET-UPS



MAGNA-LOCK SINE

Set up and go in *minutes!* No dials, scales, fixtures—just standard gauge blocks. Powerful electrical and permanent magnet models. Also inspection plates. Write Dept. NM-360

MAGNA-LOCK, INCORPORATED
BIG RAPIDS, MICHIGAN, U.S.A.

▲ For more details circle NED-823 C on enclosed inquiry slip ▲

New Processes & Materials

NEOPRENE-ASPHALT COATING protects underground pipes, tanks

Advantages of both neoprene and asphaltic based materials are combined in Gacote NA-62 protective coating for underground pipes and tanks, damp surfaces, moisture barriers, tank interiors, structural steel, and old roof structures. Compound reportedly provides twice the service of a coal tar coating at half the price of a neoprene coating. It can be applied by brush, roller, or spray to damp wood, concrete, or metal surfaces and provides good weathering and moisture resistance, as well as protection for mild chemical service. Black and maroon colors are available. • **Gates Engineering Co.**, Wilmington 99, Del.

▲ For more details circle NED-825 C on enclosed inquiry slip ▲

FLOOR WAX high gloss type kills insects, germs

Triple-action Super-Service Freewax, a heavy-duty floor wax, gives a long-lasting high gloss to all floor surfaces; controls roaches, ants, silverfish, and other crawling insects; and prevents growth of germs and bacteria. Finish is scuff resistant and nonyellowing. It can be used on asphalt tile, rubber tile, terrazzo, cement, wood, vinyl, and other surfaces, and is waterproof and will not water spot. • **Chemical Corp. of America, Inc.**, Pepper Bldg., Tallahassee, Fla.

▲ For more details circle NED-826 C on enclosed inquiry slip ▲

FLOOR PATCHING COMPOUND can be applied in 1/8-in. layer

Highly adhesive RIW Epo-Tox floor patching and resurfacing compound can be trowelled on in layers as thin as 1/8 in. and exhibits impact and abrasion resistance five to six times as great as concrete. A blend of epoxy resins, mineral aggregate, a catalyst, and color, the compound dries overnight without shrinkage. It can be used to resurface large or small areas of concrete, wood, metal, quarry or glass tile, and other surfaces, and protects against most industrial acids, alkalies, and solvents. Used indoors or out, compound is offered in gray, red, and green colors. • **Standard-Toch Chemicals, Inc.**, Toch Brothers Div., 2600 Richmond Terrace, Staten Island 3, N. Y.

▲ For more details circle NED-827 C on enclosed inquiry slip ▲

Stop Oil Leaks!

Without draining lines or equipment

Users' Reports Tell How OYLTITE-Stik can help you

". . . used for our diesel oil storage tanks." *Railroad*

". . . used as a form of gasket around gear boxes and oil boxes." *Container Mfr.*

". . . sealing 1/2" and 3/4" threaded pipe joints around hydraulic pumps on lifting equipment . . . pressure ranges from 0 to 2500 lbs." *Chemical Company*

". . . for plate cracks and loose seams in fuel oil bunkers of towboats and barges. One such repair has withstood critical vibration in excess of 2 months." *Ship Builder*

". . . on a transformer oil tank." *Furniture Manufacturer*

". . . to stop minor leaks in and about our power houses, particularly with streamline fittings." *Power Company*

OYLTITE-Stik is one of the best time-savers and trouble-stoppers you can find.

• See your supplier for OYLTITE-Stik, or write direct on company letterhead for free sample.

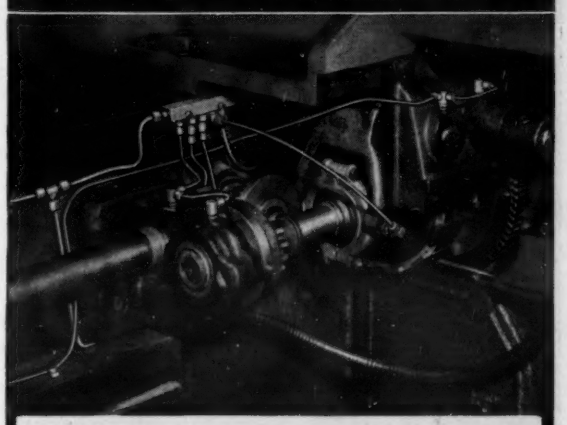
LA-CO BRAND **LAKE CHEMICAL CO.**
3053 W. Carroll Ave., Chicago 12, Ill.

▲ For more details circle NED-828 C on enclosed inquiry slip ▲

ALEMITE ACCUMITE® LUBRICATION OFFERS YOU

Small Size • Simple Installation • Low Cost

FOR ANY SIZE MACHINE!



All the Advantages of "Built-In" Measured Lubrication!

- Meters exact amounts of lubricants to all bearings whenever system is operated.
- Accurately meters these shots of oil or grease: .003 cu. in., .006 cu. in., .009 cu. in. Available with adjustable fittings for applications requiring measured metering from .003 cu. in. to zero.
- Eliminates shutdown time for lubrication.
- Seals bearings against dirt, grit and water.
- Prevents bearing troubles due to neglect or use of wrong lubricants.
- Services all bearings in one operation.
- Avoids work spoilage and bearing repairs due to over-lubrication.

Machines for which modern centralized lubrication was considered impractical can be equipped with a versatile, low-cost Accumite System. Small size, simple installation and low cost of Alemite's Accumite System overcomes virtually every limitation in size and type of application.

Complete with fully automatic pump, metering valves and controls, the Accumite System offers all the advantages of higher-priced systems.

Typical applications are: packaging, canning, labeling and textile machines . . . machine tools . . . tractor trailers, lift trucks and farm implements. Accumite lubricates either large or small stationary and mobile machinery.

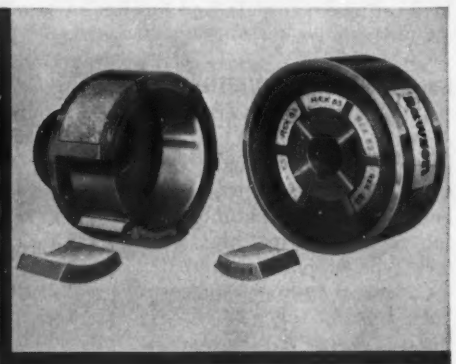
Write for Alemite Accumite Catalog!

Symbol of SW Excellence — ALEMITE DIVISION STEWART-WARNER CORPORATION

1850 Diversey Parkway, Chicago 14, Illinois

▲ For more details circle NED-829 C on enclosed inquiry slip ▲

NOW! YOU CAN USE SMALLER MOTORS... LOWER STARTING EQUIPMENT COSTS ... SECURE OVERLOAD PROTECTION WITH Rawson CENTRIFUGAL CLUTCHES



Rawson is an all-metal centrifugal clutch that drives in either direction and provides cushioned starting of equipment at predetermined R.P.M. It is of rugged design and available for applications up to 2000 horsepower.

Rawson "no-load" starting of motors permits across the line starting and smaller motors generally can be used. With Rawson cushioned starting of high-inertia loads, NEMA "B" or standard squirrel-cage motors can be selected instead of expensive special high-torque motors. Also, jamming or over-loading will cause a Rawson clutch to slip and provide automatic protection.

For your free copy of Rawson Catalog 141, contact your Rawson distributor or write direct.

- "No-Load" Starting of Motors
- Cushioned Starts for Equipment
- Durable All-Metal Shoes
- 100% Slip-Free Driving Power
- Effective Heat Dissipation
- Longer Service—Greater Capacity
- Can Be Furnished with Delayed Engagement for Standby or Dual Drive

FORMSPRAG COMPANY
23595 HOOVER ROAD, DEPT. 109 • WARREN (DETROIT), MICHIGAN
Precision Power Transmission Products

▲ For more details circle NED-824 C on enclosed inquiry slip ▲

New Stanley-Yankee Vises cut costs at bench and machine

New No. 4993A Swivel-Tilt Vise combines swivel base and angle base for quick compound angle set-ups. The exclusive dovetail slot in the vise permits adjustment the full length while retaining the swivel feature. Vise can be detached from swivel-tilt base quickly and easily.

New No. 993A Utility Vise with 3" Jaws—precision-built for machine shop use.

Vises and bases are available separately. Ask your industrial supply distributor for details, or write Stanley Tools, 5803 Elm St., New Britain, Connecticut.

STANLEY® The Tool Box of the World

▲ For more details circle NED-830 C on enclosed inquiry slip ▲

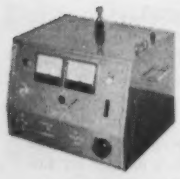
▲ For more details circle NED-831 C on enclosed inquiry slip ▲

Headquarters for HIGH POTENTIAL Testing

Every over-potential testing need from the super-power generator to the appliance motor . . . is met by a HYPOT®.

150 KV Testing . . Mobile HYPOT®

Non-destructive testing of power cables, generators, bushings and insulators with AC and DC test potentials from 45 to 150 KV. Newly developed DC Mobile HYPOT® offer test facilities equivalent to AC testers of greater bulk . . . and are easier to handle, cost less. Write for bulletin "Mobile HYPOT®", outlining your requirements.



30 KV Testing . . Bench HYPOT®

Widely employed for insulation testing of cables, power distribution equipment and heavy duty motors. Models available with AC and with DC test potentials from 5 to 30 KV. Write outlining your needs.

10 KV Testing . . Portable HYPOT Jr.®

An advanced over-potential tester that enables anyone to make high potential breakdown tests. Separate lights indicate excess leakage current and insulation breakdown. Test voltage collapses on breakdown or shorts, protecting instrument and equipment. Models available with test voltage ranges from 1500 v a-c, to 10,000 v a-c. Write for bulletin "HYPOT Jr.®"

Write Today

10-35.9 a

ASSOCIATED RESEARCH, Incorporated
"Electrical Testing Instruments Since 1936"
3765 W. Belmont Avenue • Chicago 18, Illinois

▲ For more details circle NED-832 C on enclosed inquiry slip ▲

New Literature & Catalogs

Leasing Office Equipment

United States Leasing Corp.—Company explains its program of leasing diversified, nonexpendable equipment and fixtures to all types of businesses and industries. This includes general office equipment as well as production equipment. Entitled "Pay As You Profit," brochure outlines reasons for leasing and answers common questions on leasing practice and procedure.

▲ For more details circle NED-833 C on enclosed inquiry slip ▲

Control Knobs & Panel Hardware

Raytheon Co., Industrial Apparatus Div.—In addition to control knobs, 4-page folder pictures knob locks, shaft locks, test jacks, subminiature fixed contact and snap-in contact test jacks, printed circuit test jacks, 5-way binding posts, fuse and resistor clips, terminal board brackets, captive hardware, and pull handles. Items are shown in specification drawings with dimensions.

▲ For more details circle NED-834 C on enclosed inquiry slip ▲

Electrical Insulation Materials

Insulation Manufacturers Corp.—Completely indexed 36-page Catalog 34, showing both products and applications, covers electrical insulations for repair and maintenance of motors, generators, and electrical or electronic equipment. Cuffed paper in dispenser packages; formed fiber, Mylar, and hard maple wood wedges; tying cords and twines; cotton, asbestos, and woven glass tapes; cotton, glass, and varnished tubing and sleeving; Mica plates and laminates; and high temperature insulations are among products reviewed.

▲ For more details circle NED-835 C on enclosed inquiry slip ▲

Extruded Shapes

H. M. Harper Co.—Extruded shapes, how they are made, the shapes available, tolerances, specifications, and some case history problem solutions are reviewed in 16-page Vol. 24, No. 3 of "Bolt News." Shapes are available in stainless, alloy, and carbon steels, titanium, and specialty alloys. Extrusions are made from a hot billet using glass as both a lubricant and heat insulator.

▲ For more details circle NED-836 C on enclosed inquiry slip ▲

Ideas for Die Protection

Minneapolis-Honeywell Regulator Co., Micro Switch Div.—Series of five data sheets entitled "How to ideas for die protection" show how precision switches can be incorporated into die design to insure correct, safe operation. Cross-sectional diagrams and construction details are included.

▲ For more details circle NED-837 C on enclosed inquiry slip ▲

Lock Nuts & Washers

Palnut Co.—Complete line of Palnut spring tempered steel lock nuts, including regular, hex, integral washer, acorn, wing, and adjusting nut types, are shown in 20-page Catalog 592. Design, and locking principle, advantages, typical applications, dimensions, load ratings, materials, and finishes are considered.

▲ For more details circle NED-838 C on enclosed inquiry slip ▲

Maintenance of Unitized Tooling

Punch Products Corp.—20-page Unipunch manual on "Maintenance of Unitized Tooling" is written by an engineering supervisor of the Butler Mfg. Co., a large user of this type of tooling. Observations and experiences given by the author constitute cost and time saving suggestions for other users of Unitized tooling, or any type of punches and dies.

▲ For more details circle NED-839 C on enclosed inquiry slip ▲

Electrostatic Gun Spraying

Ransburg Electro-Coating Corp.—Many applications of the manually-operated No. 2 Process Electrostatic Hand Gun for hand spray painting are pictured in 12-page brochure. Gun uses electrostatic forces, instead of compressed air, for atomizing and applying liquid coatings. Article to be coated is grounded electrically, and spray particles are pulled to the article.

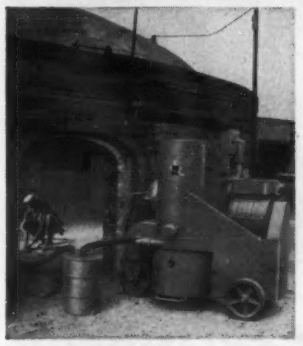
▲ For more details circle NED-840 C on enclosed inquiry slip ▲

Remote Cable Controls

Teleflex Inc.—Remote control effected through Teleflex push-pull mechanical cable controls and accessories is demonstrated in 12-page Bulletin 8867. Particular emphasis is paid to airframe applications involving straight line, angular, and rotary motions. Engineering and design data are included.

▲ For more details circle NED-841 C on enclosed inquiry slip ▲

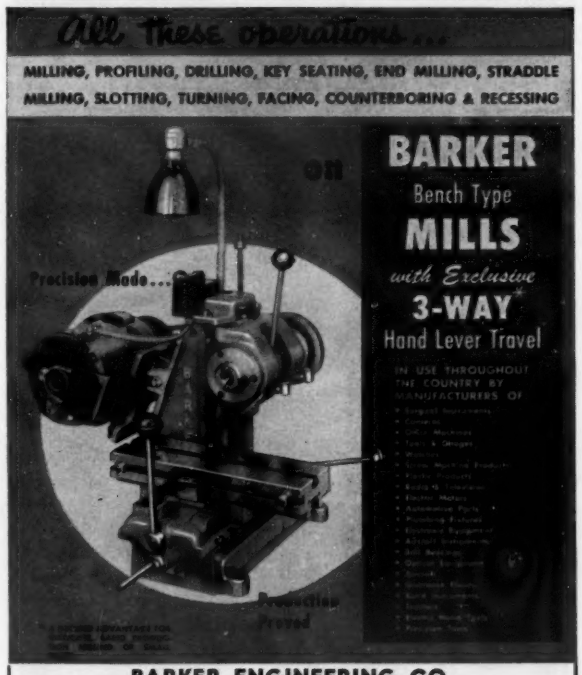
PORTABLE PNEUMATIC SYSTEM DESIGNED FOR RAPID, SAFE, EFFICIENT CONVEYING



Versatility and cost cutting are just two of the many capabilities of the Hoffco-Veyor portable pneumatic system which has provided as much as an 80% savings in operating costs and increased plant efficiency by 20%. The Hoffco-Veyor is an inexpensive solution to the problem of rapid, safe movement and recovery of a wide variety of dry materials including rock granules, plastic pellets, and gritty or pulverized substances as well as corrosive chemicals.

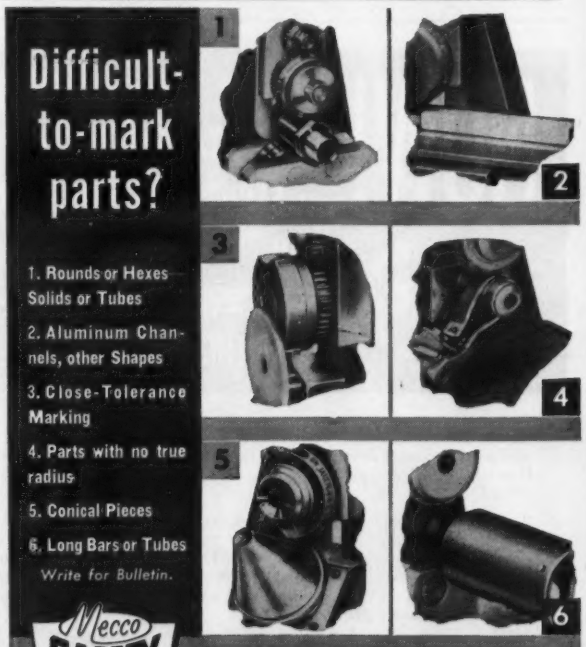
Available in two models, portable Hoffco-Veyors normally employ 35 foot length, 2½ in. diameter hose. Collection rates vary from 50 to 100 lbs. per minute depending on conditions and model in use. Where quantities exceed 7½ cubic feet standard 55 gallon drums can be used as auxiliary collectors. Equipped with inlet valves to take standard size 1½ to 2 in. vacuum hose, the unit can be used as a vacuum cleaner or dust collector. Hoffco-Veyors easily turn their own length for wheeling to any location in the plant. Source: For free brochure and case history, **U. S. Hoffman Machinery Corp., Dept. I, 103 Fourth Ave., N. Y. 3, N. Y.**

▲ For more details circle NED-842 C on enclosed inquiry slip ▲



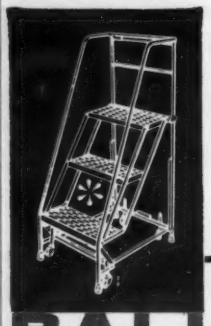
BARKER ENGINEERING CO.
DIVISION
THE F. HOHFELDER CO.
26470 Lakeland Blvd. • Cleveland 32, Ohio
WRITE FOR COMPLETE DATA ON THIS MILL AND BARKER DUAL MILLS IN TWO SIZES.

▲ For more details circle NED-843 C on enclosed inquiry slip ▲



Mecco SAFETY MARKING TOOLS
A G-R-D FIXTURE WILL DO YOUR JOB
M. E. CUNNINGHAM CO.
1055 CHATEAU STREET, PITTSBURGH 33, PA.

▲ For more details circle NED-844 C on enclosed inquiry slip ▲



LOW C.G. -more safety

BALLYMORE Safety-Step LADDERS

WITH OR WITHOUT HANDRAILS

Safe, wide-base Ballymore pyramid design provides a new low center of gravity, gives a new stability at heights up to 15 ft. Sturdily welded, corrosion-resistant steel or aluminum Safety-Step ladders can be moved easily on casters to any area, grip floor firmly when stepped on. 4 types, 47 models.

For illustrated catalog covering complete line, write to BALLYMORE COMPANY, WEST CHESTER 3, PA.

Call your LOCAL DISTRIBUTOR

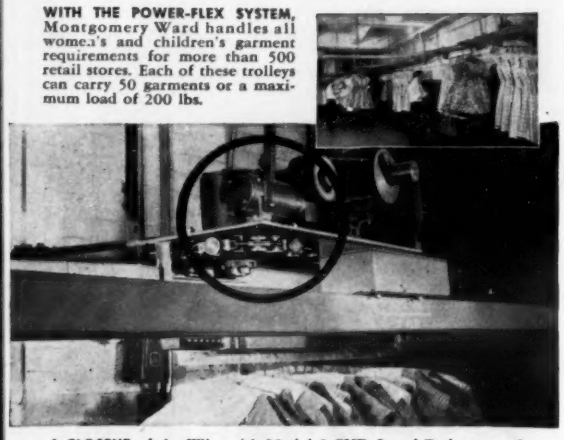
BALLYMORE EQUIPMENT FOR WORKING *Safely* ABOVE FLOOR LEVEL

▲ For more details circle NED-845 C on enclosed inquiry slip ▲

a CM Power-Flex Conveyor using a WINSMITH Speed Reducer

"DELIVERS THE GOODS" FOR MONTGOMERY WARD

WITH THE POWER-FLEX SYSTEM, Montgomery Ward handles all women's and children's garment requirements for more than 500 retail stores. Each of these trolleys can carry 50 garments or a maximum load of 200 lbs.



A CLOSEUP of the Winsmith Model 5 CVD Speed Reducer used to drive the CM Power-Flex Conveyor which features Telematic Dispatch Control. Chain Speed is 40 ft/min.

MONTGOMERY WARD'S DISTRIBUTION CENTER on Varick Street in New York City, is built around a Columbus McKinnon Power-Flex Conveyor System equipped with a Winsmith Speed Reducer. CM's Power-Flex is a power and free system that, in this application, handles as many as 38,000 women's and children's garments in a single 8-hour day. Its advanced design and construction features permitted savings of 50,000 sq. ft. of floor space and untold dollars in operating economies.

COLUMBUS McKINNON specifies Winsmith Speed Reducers for their Power-Flex Systems because high output efficiency, compactness, long service life, minimum maintenance and low initial cost are prime factors.

FOR EVERY APPLICATION from 1/100 to 85 H.P. —in ratios from 1.1:1 through 50,000:1—investigate the advantages of standardizing on Winsmith Speed Reducers for your products.

WINSMITH SPEED REDUCERS

WRITE TODAY for complete selection information and engineering data.

WINSMITH, INC.
119 Eaton Street, Springville, (Erie County), N. Y.

▲ For more details circle NED-846 C on enclosed inquiry slip ▲

New Processes & Materials

RUST-INHIBITING PRIMER dries hard in 15 minutes

Jet-Dri multi-surface rust-inhibiting primer not only stops rust on contact but dries to a hard, impact-resistant, salmon-colored coat in 15 min. Maintenance painters can apply a prime coat and, within minutes, follow with a finish coat without dismantling scaffolding. Primer forms an airtight, protective bond on metal surfaces and reverses normal electrogalvanic action. It resists acid, alkali, salt spray, corrosive fumes, oil, and boiling water. When applied over wood or plaster surfaces, it seals out moisture and serves as an effective enamel undercoat. • **Consolidated Chemical & Paint Mfg. Co.**, 456 Driggs Ave., Brooklyn, N. Y.

▲ For more details circle NED-847 C on enclosed inquiry slip ▲

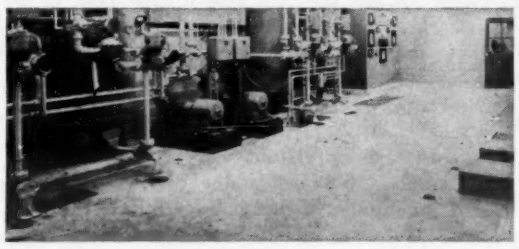
CHEMICAL POLISHING DIP for 300 Series stainless steel

A mirror-like finish is imparted to 300 Series stainless steel by simply immersing the metal in Ox-Off Lustre Dip for a short period of time. This completely chemical polishing process eliminates need for electropolishing and machine or hand buffing. Without using electricity, it levels off slight scratches and mars, leaving a polished, smut-free surface. Dip is shipped in non-returnable 15-gal cubitainers. • **Chemclean Products Corp.**, 15-08 121st St., College Point 56, N. Y.

▲ For more details circle NED-848 C on enclosed inquiry slip ▲

CORROSIONPROOF FLOORING material applied on existing floor

Corrosion from spillage of acids and caustics is resisted by improved Corocrete (*NED, July* '55), a high strength material composed of thermosetting resin, a



hardening agent, and a special aggregate. It is applied over existing powerplant and other floors in a 1/4-in. thickness, setting up to take normal traffic within 24 hr. Red, green, gray, black, and terrazzo effect colors are available. • **Ceilcote Co.**, 4832 Ridge Rd., Cleveland 9, Ohio.

▲ For more details circle NED-849 C on enclosed inquiry slip ▲

1001 Clamping Jobs

WITH THE PUNCH-LOK K-45 CLAMP-MASTER KIT

Contains preformed, open-end clamps and P-38 locking tool.

A Low Cost Economical Kit— For Fast, Smooth, Clamping of Hose, Insulation, Cable, Rope, Split Beams, etc.

LOOK! It's "Loked" for Safety

See your nearby Punch-Lok distributor or write direct.

PUNCH-LOK Company

The Sign of a GOOD Hose Clamp

Dept. A, 321 N. Justine St., Chicago 7, Ill.

▲ For more details circle NED-850 C on enclosed inquiry slip ▲

what is a neg'ator®?

It's a *constant-force* spring. A new basic mechanical component. A coiled band which extends many times its original size without the increasing force common to conventional springs. Now being used as an extension member, a motor, band, clamp, or clip, it upsets all previous spring principles. It does what springs have never done before.

Do you want a NEG'ATOR constant-force spring to test for yourself? Write us, *on your letterhead*, and we will send you, free, a 30-inch long sample spring with a force rating of approximately 1/2 pound.

®Trademark for Hunter's non-cumulative force spring.

HUNTER Springs

HUNTER SPRING COMPANY
A Division of American Machine and Metals, Inc.
14 Spring Avenue, Lansdale, Pennsylvania

▲ For more details circle NED-851 C on enclosed inquiry slip ▲

INVESTIGATE!

BEAM LP-Gas CARBURETION

BEAM CARBURETION SYSTEMS

- Easiest to Install
- Most Compact in the Industry
- Offer Many Exclusive Advantages

For instance, the Beam Model 60 Vaporizer-Regulator is only 4" in diameter, 3" thick and weighs 24 oz. It handles all engines up to 60 hp. The Beam "Water-Runner" installation system saves time, cost and space.

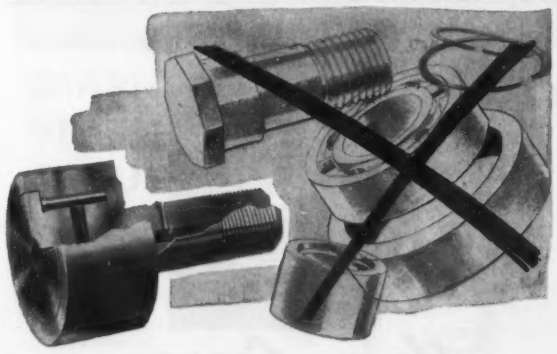
Beam has the most extensive line of complete, ready-to-install carburetion systems in the Industry.

CONVERT WITH BEAM Write today for complete details and specifications for your equipment.

THERE'S A BEAM OFFICE NEAR YOU

BEAM PRODUCTS MFG. CO.
CALIFORNIA
Factory: 3040 Rosslyn St., Los Angeles 65
Export Division: 354 S. Spring St., Los Angeles 13
SALES OFFICES AND/OR WAREHOUSES
NEW YORK 96-10 Linden Blvd., Ozone Park 16, Queens
FLORIDA 2500 N.E. 48th St., Pompano Beach
TENNESSEE 2020 Airways Blvd., Memphis 4
ILLINOIS 1414 S. Michigan Ave., Chicago 5

▲ For more details circle NED-852 C on enclosed inquiry slip ▲



McGILL CAMROL® BEARINGS eliminate assembly of improvised cam followers, track and guide rollers

CAMROL CF Bearings with integral stud save the cost and inconvenience of assembling improvised bolt and roller units from miscellaneous parts. Standard bearings are stocked with roller diameters from 1/2" to 4". Furthermore, CAMROL bearings are designed to assure precision accuracy, anti-friction dependability, low radial space requirements, high load capacity and simplified lubrication.

Write for helpful BEARING HANDBOOK H54C FOR COMPLETE DATA

engineered electrical products McGILL® precision needle roller bearings

McGILL MFG. CO., Bearing Div., 101 N. LAFAYETTE ST., VALPARAISO, IND.

▲ For more details circle NED-853 C on enclosed inquiry slip ▲

Handles More Air

...with minimum pressure drop

Fewer parts...simplified locking ring provides positive lock... tight fit...minimum wear.

1/8" to 3/4" connections. All Series 2-RL Sockets and Plugs are interchangeable – likewise all Series 3-RL Sockets and Plugs. Eliminates any need for various size couplings in hook-up – makes it easy to keep stock of parts in balance – holds inventories to a minimum.

HANSEN SERIES RL QUICK-CONNECTIVE RING LOCK COUPLING

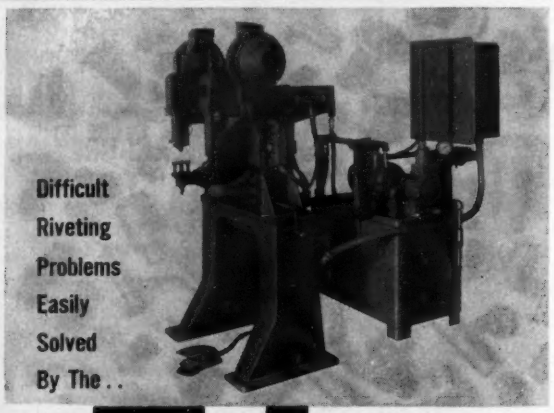
Write for Catalog – a ready reference when you want information on couplings in a hurry.

Instant Automatic Flow or Shut-Off

Representatives in Principal Cities ...See Yellow Pages

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 35, OHIO

For more details circle NED-854 C on enclosed inquiry slip



New T-J HYDRAULIC DUAL RIVITOR

With Increased Riveting Production • Quality • Versatility

Added recently to the versatile T-J line of unit and production line riveting and clinching machines is the new Hydraulic Dual Rivitor. The Model HDR will set two 1/4" solid steel rivets at once with adjustable spacing from 1 1/8" to 18" maximum, center to center, being fed from 10" hoppers. Operating cycle is approximately .8 second, at 420 P.S.I. oil pressure furnished from a hydraulic power unit with maximum of 1000 P.S.I. output. For complete specifications write to The Tomkins-Johnson Co., 2425 W. Michigan Ave., Jackson, Michigan for Bulletin HDR-4-59.

For information on other T-J Rivitors and Clinchers write for Bulletin No. 555.

T-J TOMKINS-JOHNSON

For more details circle NED-855 C on enclosed inquiry slip

CFC Multi-Cartridge Filter

CFC Honan-Crane FILTER FOR OILS

Provides micro-clarity of engine lube and fuel oils, grinding oils, soluble oil coolants, hydraulic oils, quench oils, etc.

9 types of interchangeable cartridges containing inert media for removal of solid contaminants, or Cranite (fuller's earth) for removal of solid particles plus the products of oxidation.

10 models, with 1 to 36 filter cartridges, for various flow rates.

Write for Bulletin 201 to Dep't NE

CFC COMMERCIAL FILTERS CORPORATION
Fulflo Honan-Crane Delpark Michiana
MELROSE 76, MASSACHUSETTS
Plants in Melrose, Massachusetts and Lebanon, Indiana

For more details circle NED-856 C on enclosed inquiry slip

New Literature & Catalogs

Electric Meter-Relays

Assembly Products, Inc.—High accuracy is obtained with expanded scale design in Voltron meter-relays for indicating and control functions. Circuitry, electrical and design specs, and application data are included in 12-page illustrated bulletin.

For more details circle NED-857 C on enclosed inquiry slip

Thermocouples & Accessories

Research Instruments, Inc. — Data on metallic sheathed, hard packed, oxide insulated thermocouples and extension wires are content of Catalog 101. Included is information on optional thermocouple terminals and fittings. Hot junction, bare wire, and open end extension types are shown, and prices are quoted.

For more details circle NED-858 C on enclosed inquiry slip

Safety Cans & Oilers

The complete Eagle line of oilers, safety cans, and oil and gasoline containers is described and shown in illustrated 1960 Catalog. Complete specifications are given on these items for industrial and maintenance use. Write to Eagle Mfg. Co., 1058 Charles St., Wellsburg, W. Va.

For more details circle NED-859 C on enclosed inquiry slip

Thermocouple Wire

Engelhard Industries, Inc., Baker Platinum Div.—"Noble Metal Thermocouple Wire" is title of illustrated brochure on the selection and application of the proper materials for temperature sensing elements. Temperature-millivolt curves, showing working temperatures also, are included on various materials for temperatures ranging as high as 2100° C.

For more details circle NED-860 C on enclosed inquiry slip

Plastic Multiple-Tube

Electric Storage Battery Co., Jessall Plastics Div.—Strip-a-Tube, described in illustrated bulletin, consists of ten tubes of flexible plastic, joined together to form a tape-like harness. Individual tubes are separable. It is usable for low pressure fluid distribution, in multipressure measurement systems, and as insulating harness for electric wiring. Twelve stock sizes are available with 1/32 to 1/4-in. ID tubes in lengths to 100 ft.

For more details circle NED-861 C on enclosed inquiry slip

Rolling Doors & Partitions

Cookson Co.—20-page Catalog 6001 is devoted to details of the 1960 line of Cookson rolling doors and partitions. Data are included on steel and aluminum rolling service doors, UL-labeled fire doors, steel and aluminum rolling grilles, extruded Alumilited counter doors, and wood side-coiling partitions.

For more details circle NED-862 C on enclosed inquiry slip

Brazing Products & Techniques

American Brazing Alloys Corp.—Compositions, melting points, and applications for various silver solders and brazing alloys are presented in 4-page bulletin. Included is comparison chart with other low temperature brazing alloys.

For more details circle NED-863 C on enclosed inquiry slip

Controlling Temperatures

Vapor Heating Corp., Vap-Air Div.—Low cost and 30-day delivery are features of Vap-Air standard mercury thermostats outlined in 18-page Catalog 684. Three standard mercury thermostat groups are described for sensing case, gas or fluid, and surface temperatures.

For more details circle NED-864 C on enclosed inquiry slip

Air Control Valves

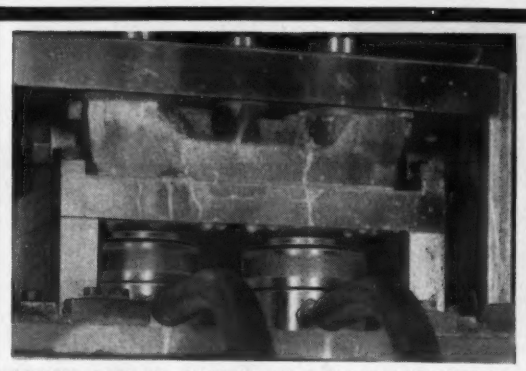
Westinghouse Air Brake Co., Industrial Products Div.—Over 1170 different types and sizes of air directional valves for pneumatic control purposes are detailed in Catalog A4-75.01. Performance and application information is given on 55 operators and nine basic valves, with dimensions, capacity, weight, and JIC symbols for each.

For more details circle NED-865 C on enclosed inquiry slip

Electronic Building Blocks

Alden Products Co.—"Quick Order Guide" is intended to aid design engineers plan and package circuitry. This 20-page booklet lists off-the-shelf components used to make up complete electronic systems. It explains the Alden method of modular construction of electronic equipment.

For more details circle NED-866 C on enclosed inquiry slip



HYDRAULIC FIXTURE LOCKING COMPONENTS BOOST MACHINE OUTPUT!

- COMPACT—BUILD INTO FIXTURES EASILY
- AUTOMATE YOUR FIXTURES FOR FRACTION OF "DO-IT-YOURSELF" COST!
- ULTIMATE SPEED IN WORK LOADING
- A PERMANENT INVESTMENT—TRANSFERS FROM FIXTURE TO FIXTURE
- SINGLE OR MULTIPLE LOCKING HEADS AVAILABLE WITH MATCHING AIR-HYDRAULIC BOOSTER SYSTEMS

Write for free full scale templates and new literature! Attach this ad to your letterhead and mail TODAY. Order now from your stocking Industrial Distributor

WILTON

WILTON TOOL MFG. CO., INC. NED-30
SCHILLER PARK, ILLINOIS

For more details circle NED-867 C on enclosed inquiry slip

"Wouldn't use any other sealer"

KEY® Graphite Paste, the tight sealing pipe joint compound, goes on easy, seals fast. It's ideal for oil, gas, and high pressure steam lines – safe for flammable liquids (officially listed by Underwriters' Laboratories). Expands under heat – lubricates and protects threads while it seals. Joints don't freeze – disconnecting always possible.

Key Graphite Paste is applied with a brush – no crumbling or waste. Extra long open-can life eliminates thinning and stirring.

Available in 1 lb., 2½ lb., 10 lb., and 500 lb. drums. WRITE FOR CIRCULAR 240-B AND FREE SAMPLE.

W-K-M DIVISION OF ACF INDUSTRIES INCORPORATED
Dept. Z-03, P.O. Box 2117, Houston, Texas

For more details circle NED-868 C on enclosed inquiry slip

GLO-GLUVS*

REVOLUTIONARY ADVANCEMENT IN INDUSTRIAL WORK GLOVES

Maximum **Visibility** and worker safety are now provided by this new development . . . hands can really be **seen!** A natural for jobs where hand signals are used — night work, etc. Granet GLO-GLUVS have a special vinyl coating which offers maximum resistance to abrasion and solvents — and also provide a firm grip on objects covered with grease or oil. Equip your men with this safe rugged glove.

WRITE

*Trademark

Write on your letterhead for a free sample pair, or use reader service card for descriptive brochure.

THE GRANET CORP.
26 LORING DRIVE, FRAMINGHAM, MASS.

For more details circle NED-869 C on enclosed inquiry slip

Bench Tops

LAMINATED HARD MAPLE

Steel bench bases, legs and drawers available for use with Tolco Tops. Write for complete illustrations and prices.

ESTABLISHED 1894

THE TOLERTON COMPANY

265 N. FREEDOM AVE. · ALLIANCE, OHIO

▲ For more details circle NED-870 C on enclosed inquiry slip ▲

Ruggedly built for tough in-plant loads

Salem-Brosius' Phillips-designed heavy-duty trailers are built to take a beating. They are designed to safely and economically haul forgings, castings, ingots, slabs, plate, coils and other products requiring in-plant handling.

Designed in load-handling capacities from 6000 to 600,000 lbs, Phillips trailers feature front and rear axle fifth wheels for better steering, articulated axles, Timken wheel bearings, solid or pneumatic tires, and 4, 8, or 16-wheel models. They may be used singly or in trains. Write for further information.

Ask about rugged Phil-Dumps. They dump automatically, stack, and handle easily with lift truck.

Phil-Boxes are excellent for carrying and storing heavy materials. They stack and easily collapse.

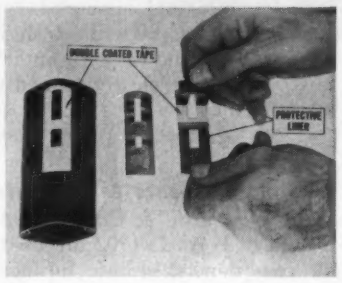
SALEM-BROSIUS, INC.

PITTSBURGH, PENNSYLVANIA

▲ For more details circle NED-871 C on enclosed inquiry slip ▲

New Processes & Materials

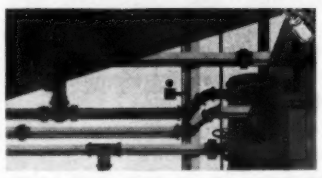
DOUBLE-COATED TAPE
precut type bonds items together



Permanent bonding of plastics, wood, metal, leather, and fabric surfaces in manufacturing and assembly operations is facilitated with use of Brady precut tape with adhesive coating on both sides. Tape is furnished mounted on Blue Streak dispenser cards or liners and can be used in most applications where liquid or paste adhesives are used. Micro-thin, high tack, and polyester film double-coated tapes are also available for special applications. Die cut tapes are made to customer specifications. • **W. H. Brady Co.**, Dept. DC, 727 W. Glendale Ave., Milwaukee 9, Wis.

▲ For more details circle NED-872 C on enclosed inquiry slip ▲

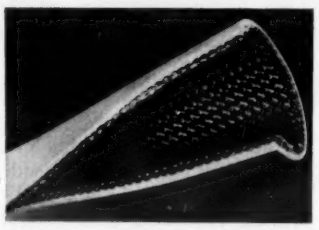
SPRAY ENAMEL
30 colors dry in 30 minutes



Hard, glossy finish and protection for wood or metal is provided by Spray Rhinamel, an indoor-outdoor industrial spray enamel. Drying in 30 min, it resists abrasion and temperature extremes. Uses include refinishing of trucks and stationary equipment; color coding of valves, steam pipes, steps, and hand rails; and maintaining benches, metal doors, and many other surfaces. Thirty colors are offered. • **Tropical Paint Co.**, 1246 W. 70th St., Cleveland 2, Ohio.

▲ For more details circle NED-873 C on enclosed inquiry slip ▲

INSULATING SLEEVING
expands four sizes over fittings



A basic braid of inorganic glass fiber reinforces Ben - Har 1151 extrusion - coated electrical insulating sleeving made of Durasyl, an abrasion resistant silicone rubber. Sleeving expands four sizes larger than its original diameter to fit over irregular connections without end fray or coating fracture. It is rated for continuous operation at 220° C and gets brittle only below −85 F. Sleeving is white and is made in even-numbered AWG sizes from No. 24 to 8 and all AWG sizes from No. 8 to 5/8 in. • **Bentley-Harris Mfg. Co.**, Conshohocken, Pa.

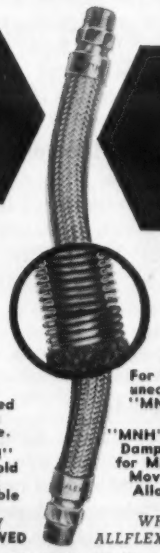
▲ For more details circle NED-874 C on enclosed inquiry slip ▲

NOW Allflex

"MNH" FLEXIBLE CONNECTORS

FROM STOCK FOR FASTEST SERVICE

• STAINLESS STEEL
• BRONZE
• MONEL



THESE STOCK SIZES
¼" ⅜" ½" ¾"
1" 1¼" 1½" 2"

IN THESE STOCK LENGTHS
12" 18" 24" 30" 36"
48" 60" 6 Ft. 8 Ft.
10 Ft. 12 Ft. 15 Ft.

. . . also available in all standard sizes, in any required length, with any standard or special fitting or flange.

ALLFLEX Standard "MNH" Flexible Connectors are sold through leading Industrial Distributors. If not available locally—THEY CAN BE SHIPPED FROM FACTORY SAME DAY ORDER IS RECEIVED

ALLIED'S new "MNH" in-stock plan assures you SAME-DAY SHIPMENT of the most popular standard "MNH" Flexible Connectors.

• No more delays while your unit is custom-built. For the first time, you have an unequalled choice of standard "MNH" sizes and lengths . . . in-stock at all times.

"MNH" FLEXIBLE CONNECTORS: Dampen Vibration. Compensate for Misalignment. Permit Offset Movement. Absorb Expansion. Allow "travel". Handle most flexing applications.

WRITE TODAY for fact-filled ALLFLEX Engineering Data Sheet

ALLIED METAL HOSE CO.

3788 Ninth St., Long Island City 1, N. Y. • STillwell 4-5173

▲ For more details circle NED-875 C on enclosed inquiry slip ▲

YOUR BEST MOVE IS TO MOVE WITH

MERRILL

MATERIAL HANDLING DEVICES FOR THE MOST IN *Safety and Economy*

Imitated, but never duplicated, Merrill Lifting Clamps are Drop Forged to give you Safety in Handling and Economy in Operation.

6 SIZES

FEATURING THIS MONTH . . .

Over 25 Material Handling Devices described in our catalog C-2.

Ask for a copy.

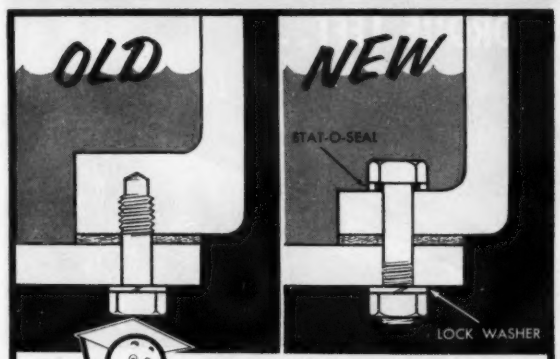
MERRILL TWIN LIFTER

MERRILL BROTHERS

56-13 Arnold Ave., Maspeth, N. Y.

1-60A

▲ For more details circle NED-876 C on enclosed inquiry slip ▲



ELIMINATE BLINDHOLES WITH . . .

Stat-O-Seal

SEAL FOR SURE!

The unique design of Stat-O-Seals and their exceptional sealing effectiveness enable engineers and designers to save costs in many ways—*eliminating blind holes is one of them.*

Why not find out about the many plus features of Stat-O-Seals for sealing studs, bolts, other fasteners and fittings.

Write for free catalog.

Parker SEAL COMPANY

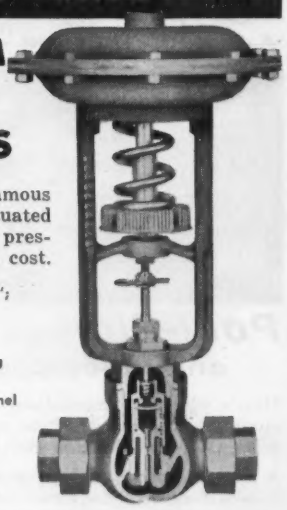
Culver City, California and Cleveland, Ohio

A DIVISION OF PARKER-HANNIFIN CORPORATION

▲ For more details circle NED-877 C on enclosed inquiry slip ▲

"PLUS PERFORMANCE" PRESSURE CONTROL

DIAPHRAGM PRESSURE REGULATORS



New companions to famous Robertshaw bellows-actuated regulators . . . for wide pressure ranges, minimum cost.

★ Single-seated valves, ½" to 2"; double-seated, 2½" to 4"
★ Four diaphragm sizes, with 9 ranges: 0.5 to 150 psig.
★ Teflon chevron lifetime packing
★ Stainless steel trim standard
★ Quick-disconnect, polished monel valve stem
★ Chrome steel adjusting spring
★ Nylon reinforced, moulded Buna-N diaphragm
★ Valve designs backed by long field experience

COMPLETE SPECS in Bulletin EY-125. Fulton Sylphon Division, Robertshaw-Fulton Controls Co., Knoxville 1, Tennessee.

Robertshaw

MR. CONTROLS

▲ For more details circle NED-878 C on enclosed inquiry slip ▲

ACCURATE AUTOMATIC FEEDING
from ounces to tons per hour

ERIEZ
HI-VI
VIBRATORY
FEEDERS

Only feeders with totally enclosed drive element as standard construction. A.C. operated, electro-permanent magnetic drive

Continuous, uniform flow of feed of all sizes and shapes of bulk materials for blending, mixing, sorting, cooling, etc. Variable feed rate. Completely automatic, extremely accurate. Increases production, provides quality control, reduces maintenance and operating costs.

Fully enclosed drive element (standard—no extra cost) makes units dust and moisture resistant; ideal for sanitary applications. Break-resistant glass fiber springs • New patented magnetic drive provides greater feeding capacity than comparable size units • No rectifier needed • Simple installation • Factory pre-tested • Fully proved in plants everywhere.

NOW AVAILABLE! . . . economical, specially constructed units for hazardous dusty locations . . . fully acceptable by Mill Mutual.

WRITE FOR FREE COMPREHENSIVE LITERATURE
Eriez Mfg. Co., 80-CA Magnet Drive, Erie, Pa.

ERIEZ

▲ For more details circle NED-879 C on enclosed inquiry slip ▲

With ONE Micro-Set Torque Tool!

Apco Mossberg's improved Micro-Set Torque Tool does both . . . torques left *and* right. Simple to set and stays set at 5 to 150 inch-pounds of torque. Releases Automatically at desired tension . . . and resets itself.

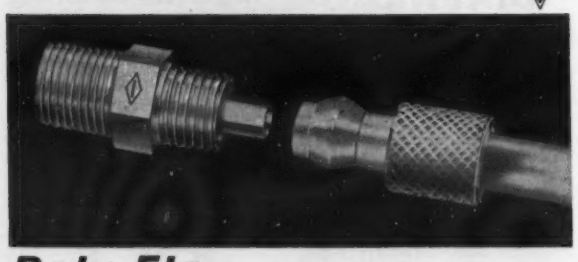
Compact and Versatile, Micro-Set is ideal for rapid precision assembly of electrical and industrial equipment, instrumentation — all close quarter tightening.

Several Sizes Available: 5 to 150 inch-pounds, 100 to 750 inch-pounds, 700 to 1600 inch-pounds, and a preset Midget type wrench for torquing in inch-ounces. Write today!

APCO MOSSBERG COMPANY
161 Lamb Street, Attleboro, Mass.

▲ For more details circle NED-880 C on enclosed inquiry slip ▲

IMPERIAL Engineering and Data Digest
ENGINEERED TUBE FITTINGS — VALVES — TUBING TOOLS



Poly-Flo tube fittings cut time and labor costs up to 93%

Here's why instrumentation, and pneumatic circuit design engineers and many others prefer Imperial Poly-Flo tube fittings and color-coded Polyethylene tubing:

- Time and labor savings up to 93% have been reported with Poly-Flo fittings and polyethylene tubing as compared to metal tubing.
- Polyethylene tubing bends readily by hand.
- Fittings need only be finger-tightened.
- Working pressures to 125 psi (¼" O.D.); 160 psi (5/16" O.D.); 100 psi (⅜" O.D.).
- Temperature range: −90° F. to 175° F.

Write for Bulletin No. 3025-C for full facts

IMPERIAL
THE IMPERIAL BRASS MFG. CO.
Dept. NED-30
6300 W. Howard St., Chicago 48, Ill.
In Canada: 18 Hook Ave., Toronto, Ont.

▲ For more details circle NED-881 C on enclosed inquiry slip ▲

New Literature & Catalogs

Metal Processing Equipment

Pennsalt Chemicals Corp.—Line of metal processing equipment is reviewed in 15-page Booklet MP-619. It includes belt and monorail type conveyor washers, rotary drum washers, sheet steel and automatic spray washers, agitating washers, automatic coating and phosphatizing machines, drying and paint ovens, and paint spray booths.

▲ For more details circle NED-882 C on enclosed inquiry slip ▲

Heating Elements & Resistors

H. W. Tuttle & Co.—Heating elements illustrated in 8-page Form D-1702 are used in heat pumps, room air conditioners, electric furnaces, and clothes dryers. Resistors for industry and government, special elements, flexible band and strip heaters, and Adaptatherm heating elements are shown, along with plant facilities.

▲ For more details circle NED-883 C on enclosed inquiry slip ▲

Contract Sheet Metal Production

Lyon Metal Products, Inc.—16-page Catalog 400-A describes company facilities for doing all kinds of sheet metal contract work. Company also makes over 1500 standard products for business, industry, and institutions, notably lockers, cabinet benches, shelving, bins, service carts, shop desks, office desks and tables, files, and storage cabinets.

▲ For more details circle NED-884 C on enclosed inquiry slip ▲

Selecting the Correct Tap

Hanson-Whitney Co.—The correct tap to use for optimum production, regardless of material or type of hole, is spelled out in detail in 28-page Tap Selector. It also lists the correct gage to use and the price for each.

▲ For more details circle NED-885 C on enclosed inquiry slip ▲

Safety Swinging Scaffolds

Patent Scaffolding Co.—How Junior scaffolds meet today's needs in construction, building maintenance, and industrial operations is related in 8-page Bulletin J-11. Equipment used in waterproofing of buldings, bridge stone repair, concrete finishing, stone mason's monorail systems, curtain wall construction, and other light-duty jobs is pictured in use.

▲ For more details circle NED-886 C on enclosed inquiry slip ▲

Drill Jig Bushings

American Drill Bushing Co.—Fold-out type catalogs printed on card stock provide easy reference to ASA standard and Thinwall drill jig bushings. Catalogs provide tabulated dimensional and price information, along with other pertinent technical data.

▲ For more details circle NED-887 C on enclosed inquiry slip ▲

Industrial Hose & Fittings

Lenz Co.—High, medium, and low pressure re-usable hose fittings, assemblies, adapters, and single and double wire braid hose are illustrated and specified in 8-page catalog. Diagramed assembly instructions are featured.

▲ For more details circle NED-888 C on enclosed inquiry slip ▲

Blast Cleaning Table-Rooms

Pangborn Corp.—Pieces ranging from small parts to castings up to 10-ft wide and weighing 6 tons can be blast cleaned in the LK and LM Rotoblast table-rooms reviewed in 12-page Bulletin 805. Dimensions and specifications of eight table-rooms, including the new two-table type, show how each can be tailored to particular requirements.

▲ For more details circle NED-889 C on enclosed inquiry slip ▲

Purchasing Industrial Diamonds

Engelhard Industries, Inc., Industrial Diamond Div.—"Benefits to Purchasers of Industrial Diamonds" is title of booklet which discusses from the diamond purchaser's viewpoint availability, reduced investment requirements, product offering, customer service technical assistance, sales development, and the organization setup for purchasing.

▲ For more details circle NED-890 C on enclosed inquiry slip ▲

Stainless Steel Tubing

Allegheny Ludlum Steel Corp.—34-page Booklet SS39 gives details on various sizes, grades, design data, corrosion resistance, and uses of both welded and seamless stainless steel tubing. More than 25 tables are featured on tubing which finds use in architectural, chemical, automotive, building, aircraft, and other fields. Sizes range from ⅛ to 6 in.

▲ For more details circle NED-891 C on enclosed inquiry slip ▲

● Peak capacities from both new and old machines! Lipe equipped automatics meet and beat competition by delivering 90% of gross geared capacity. Continuous feeding of stock of practically every length, shape and material in close-tolerance feedouts.

● Eliminates time and energy consuming hand-loading to free operators for finer work on quality . . . machine set-ups . . . care of tools. Get full information. Write or phone today.

Lipe-ROLLWAY CORPORATION SYRACUSE, N.Y.

PIONEERS IN PNEUMATIC BAR-FEEDING

▲ For more details circle NED-892 C on enclosed inquiry slip ▲

For Faster, Better Soldering

Use Rubyfluid

RUBYFLUID'S better soldering flux—liquid or paste—assures you of strong, neat unions, quickly and easily. RUBYFLUID'S fast acting formula wets out freely . . . is free from objectionable and harmful fumes . . . is economical to use.

For stainless steel soldering, use RUBY's Special Stainless Steel flux . . . designed specifically for this application . . . requires no extra heat, no extra equipment, will not corrode or discolor metal.

RUBY CHEMICAL CO.
72 S. McDowell Street Columbus 8, Ohio

Rubyfluid

▲ For more details circle NED-893 C on enclosed inquiry slip ▲

ONE "PRESS-DOWN" OF Go-Jo LOSHON SKIN CLEANER DELIVERS...

- Thorough Cleaning
- Protection Against Dermatitis
- Skin Conditioning

Quickly gets rid of stubborn grease, grime and other industrial soils. Contains GT-7, A POWERFUL ANTISEPTIC, to help prevent dermatitis. Soothing emollients condition hands against painful drying, cracking and chapping.

"ON-THE-SPOT" CLEANING SAVES TIME AND MONEY!

Convenient "press-down" dispenser ends fumbling with lids and covers. One money-saving quart can provides 360 thorough clean-ups.

Handy wall or pipe mounting bracket available for washroom or on-the-job use.

GOJER, INC. Dept. N30 Box 991 AKRON 9, OHIO

▲ For more details circle NED-894 C on enclosed inquiry slip ▲

TROPIGLAS
NEW ROOFING MATERIAL

Rot-Proof, Blister-Proof
Age-Proof, Easily Handled

Cuts Repair to Little More than Material Cost

Made of ageless, rot-proof glass fibres, Tropiglas is tough, flexible, durable, light in weight. One man handles any length easily. It lies flat—no waiting. Partially porous, it EMBEDS in Roofkoter (no air pockets to blister, no open wrinkles!) to form a one-layer, weather-tight, longer-lasting surface. Unskilled labor can apply Tropiglas with Cold-Process Roofkoter easily and quickly . . . and repair costs are down to little more than material costs!

PARKER RUST PROOF PRODUCTS

FREE! Write for complete information on money-saving TROPIGLAS roof repair TODAY!

TROPICAL PAINT COMPANY 1124-1208 W. 70th, Cleveland 2, Ohio

HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883 • SUBSIDIARY OF PARKER RUST PROOF COMPANY

▲ For more details circle NED-895 C on enclosed inquiry slip ▲

EMBOSSED LABELS

MADE ON-THE-SPOT . . . IN SECONDS
ON PLASTIC and METAL FOR PENNIES

ALL NEW MODEL M-3
DELUXE DYMO MITE
In sparkling chrome with custom hole punch and corner rounding device.

$51.95 List

• BLACK •
AND COLORS
• W/WHITE •
LETTERING

NEW MACHINE ROUNDS CORNERS!
NEW MACHINE PUNCHES HOLES!
Black Tape Now Available!

Free sample labels will convince you of the practicality of this remarkable tool. Whatever you have to label—a storage bin or a missile guidance control—the "M-3" will do it for you right "on-the-spot". Emboss finished labels yourself on a wide variety of pressure-sensitive colored plastic and metal tapes. Exclusively DYMO engineered . . . accept no substitute. Sold only through authorized DYMO distributors. Dept. B (2)

DYMO CORPORATION **FREE!** SAMPLE TAPES AND BROCHURE WRITE TODAY!

2725 TENTH STREET BERKELEY 10, CALIFORNIA

▲ For more details circle NED-896 C on enclosed inquiry slip ▲

New Processes & Materials

ASBESTOS-CEMENT PIPE
perforated for subsurface drainage

Formed basically of asbestos fibers and cement, dense uniform structure of Transite Underdrain Pipe exhibits great crushing strength for subsurface drainage uses. Pipe is perforated, has a smooth, uniform interior, and is resistant to corrosion. It is available in 6 and 8-in. diameters in 10-ft lengths and 10 and 12-in. diameters in 13-ft lengths. A line of elbows, tees, Ys, crosses, end caps, increasers, and similar fittings are available for each size. • **Johns-Manville**, 22 E. 40th St., New York 16, N. Y.

▲ For more details circle NED-897 C on enclosed inquiry slip ▲

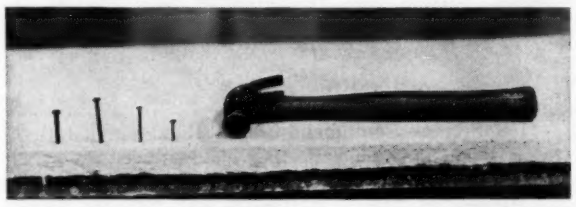
SELF-POLISHING FLOOR WAX
antislip type resists black marks

All types of flooring can be coated with self-polishing Custom wax, an emulsion of Carnauba wax fortified with polymer resins for toughness, high gloss, durability, and resistance to scuff and black marks. DuPont's Ludox adds an antislip property. Water resistant wax is restored to original luster by damp mopping and repolishing. Removal is by ordinary soaps or detergents. One to 55-gal containers are offered. • **Concord Chemical Co.**, 205 S. Second St., Camden 3, N. J.

▲ For more details circle NED-898 C on enclosed inquiry slip ▲

INORGANIC INSULATING SHEET
for ovens, ceilings, partitions

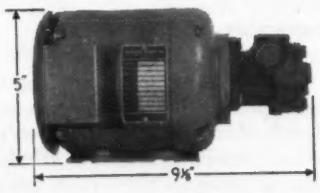
Sheets up to 4 x 8 ft in size are available in Unarco-board inorganic insulating sheet material. It is sawed, planed, sanded, and drilled like wood, and takes nails



and screws. The board's smooth sealed surfaces require no finishing, and it can be laminated, covered by veneers, or painted with alkali resistant paint. It will not burn, rot, mold, or sustain vermin. Uses include ovens, ceilings, partitions, firewalls, heat screens, and test chambers. Structural properties are unaffected by moisture, immersion in water, steam, fumes, or temperatures to 1200° F. Thicknesses of 1, 1½, 2, 2½, and 3 in. have densities of 20 to 75 lb per cubic foot. • **Union Asbestos & Rubber Co.**, Fibrous Products Div., 1111 W. Perry St., Bloomington, Ill.

▲ For more details circle NED-899 C on enclosed inquiry slip ▲

NEW



Close-Coupled Pump and Motor Combination from TUTHILL

Tuthill's new "Series 42" close-coupled pump and motor combinations have overall measurements of only 9⅛"x5". The totally enclosed motor is supplied with ratings of 1/12th to 1/6th horsepower, while the pump units have a capacity of ⅛ to 3 GPM. May be supplied either with or without a built-in relief valve.

Tuthill also offers many other models of close-coupled pump and motor combinations. These include units with capacities up to 50 GPM, for pressures to 500 PSI.

The compact design of these combinations solves tough design problems in hydraulic, oil burning, lubrication and other services. The elimination of couplings, bases and adapters results in significant savings. Reduced weight lowers shipping costs. Their compactness often simplifies assembly operations for further savings. Most close-coupled units are immediately available from stock. *Write today for complete information.*

PUMPS FOR YOUR PURPOSE **TUTHILL PUMP COMPANY**
959 East 95th Street, Chicago 19, Illinois

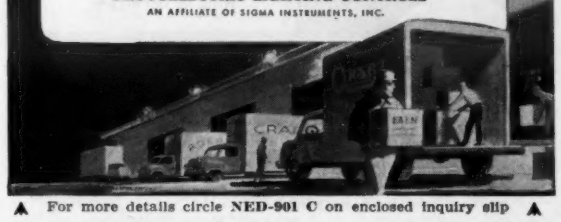
▲ For more details circle NED-900 C on enclosed inquiry slip ▲

LIGHT WHEN YOU NEED IT

. . . automatically with F-P controls

Fisher-Pierce photoelectric lighting controls automatically turn on lights in parking lots, railroad yards, docks, loading areas, storage and security areas—whenever daylight drops to preset turn-on setting—regardless of weather or time of day. Turn-on setting is adjustable, never needs re-setting; various models available with turn-on from 1 to 500 f.c. Easy to install, housed in weatherproof watt-hour meter case. Reliability and ruggedness proven by ten years of use.
Standard Model 63300C switches lamp loads up to 3000 watts, special model switches 6000 watts; SPST, SPDT or DPST power contactors. For 105-130 or 210-250V, 50/60 cycles. For larger loads, control can be used with low-cost F-P Type 250A Multiple Relays. Bulletin on request. Write The Fisher-Pierce Co., 86 Pearl Street, So. Braintree 85, Mass.

FISHER FP PIERCE
PHOTOELECTRIC LIGHTING CONTROLS
AN AFFILIATE OF SIGMA INSTRUMENTS, INC.



▲ For more details circle NED-901 C on enclosed inquiry slip ▲

NEW

Rotary Air Hoist for faster lifts

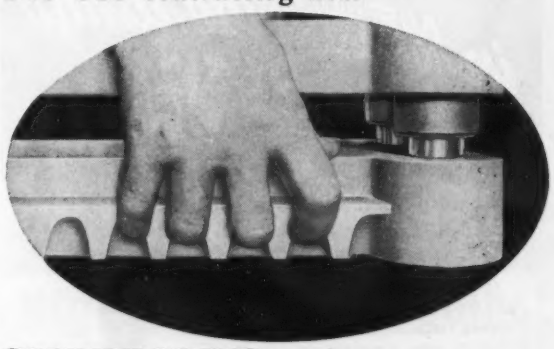
Designed for jobs where faster lifts are of primary importance. Air-motor-powered, this new line of hoists combines lighter weight and faster lifts for capacities from 500 to 2000 lb. The new hoists complement Gardner-Denver's piston-motor hoists to give you the most complete line of overhead air hoists in the industry. Over 60% of parts are interchangeable between rotary and piston hoists . . . designed for maximum safety . . . built-in external muffler for quiet operation. Write for free bulletins.

GARDNER-DENVER Since 1859
EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd.
14 Curity Ave., Toronto 16, Ontario

GARDNER-DENVER

▲ For more details circle NED-902 C on enclosed inquiry slip ▲

Eliminate Hazardous Die Set Handling *with*



SUPERIOR'S
safety flange

It is no longer necessary to take needless risks in handling die sets. Risks that might easily injure the hands of skilled die makers or ruin costly dies in process. Superior's exclusive safety flanges eliminate these hazards, by providing roomy gripping space on both sides of the die shoe, giving protection to the handler's fingers and hands.

This safe, secure gripping flange is one of the many exclusive features incorporated on Superior die sets. Write today for our free 28 page catalog that gives complete information.

SUPERIOR STEEL PRODUCTS CORP.
2754 S. 19th St. Milwaukee, Wis.

▲ For more details circle NED-903 C on enclosed inquiry slip ▲

Mix Liquids Safely

with
Air-Driven Drum Agitator

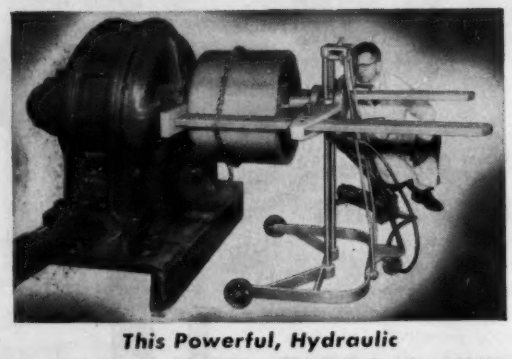
Flammable and volatile liquid mixtures can be agitated safely with the new Prenco Air-Driven Drum Agitator. Designed to operate off compressed air systems in plants, it fits into standard 55-gallon drums without need for drum alteration. Speedy agitation to even consistency is assured through scientific paddle design.

Lightweight and completely portable, the Prenco Air-Driven Drum Agitator is available in Model C for light mixtures and Model D for heavy, viscous materials. Write for full details.

PRENCO
LIQUID AGITATORS
Prenco Products, Inc., 2605 W. 14 Mile Rd., Royal Oak, Mich.

▲ For more details circle NED-904 C on enclosed inquiry slip ▲

THE QUICK, EASY WAY TO REMOVE AN OBJECT FROM A SHAFT!



This Powerful, Hydraulic
PULLEY PULLER
For Removing Pulleys, Wheels, Gears, Couplings, Sheaves, etc.

One man can do it in minutes — even if objects are stuck fast. No crowbars, sledges, or torches. No damage to equipment. Puller is adjustable — easy to move — rugged. Hundreds being used in industry.

- 5-ton size on wheels $122.00
- 20-ton size on wheels $368.00
- 50-ton size on wheels $830.00

F.O.B. Factory, New Quicklink chain and set of ten ram adapters at slight additional cost.
Write for complete information Catalog E

INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

▲ For more details circle NED-905 C on enclosed inquiry slip ▲

DiaTest SMALL BORE GAGES
in NEW, wide range OF SIZES!

DIAMETERS: .047" to 1.130"
ACCURACY: .00008"

ANNOUNCING NEW SETS
- SET No. E-0: Range .047" to .062"
- SET No. E-161: Nominal Range 1/16" to 3/8" (A "fractional" set, in increments of 1/16")
- FOUR additional sets available, covering range of .057" to 1.130".

(ALL SETS ARE COMPLETE with measuring heads, setting rings, dial indicator, etc.)

Diatest gages measure tapered, incomplete, out-of-round, and all other bore variations.

RIGHT ANGLE ATTACHMENT, EXTENSION RODS, AND DEPTH ADJUSTER ACCESSORIES ARE AVAILABLE.

Write today, or call NEwcastle 1-8888 for full information!

FOSTER SUPPLIES CO.
6122 MILWAUKEE AVE., DEPT. NED.
CHICAGO 46, ILLINOIS

▲ For more details circle NED-906 C on enclosed inquiry slip ▲

New Literature & Catalogs

How to Join Aluminum

"Mechanical Joining of Aluminum" is title of 32-page guidebook on how to join aluminum parts. Discussed are mechanical fastening methods using nails, pins, metal stitching, mechanically formed joints, and architectural fasteners. Techniques and applications for all methods are shown. Available only by writing on company letterhead to Reynolds Metals Co., Reynolds Metals Bldg., Richmond 18, Va.

▲ For more details circle NED-907 C on enclosed inquiry slip ▲

Metalworking Facilities

Commercial Shearing & Stamping Co.—24-page Bulletin 900-P5 is entitled "How Moving Metal Reduces Parts Cost." It describes stamping, upset forging, Rotoforming, and other metal parts finishing processes offered by company on a custom basis. Typical parts produced as well as available machines, manpower, and production facilities are shown and described.

▲ For more details circle NED-908 C on enclosed inquiry slip ▲

Flexible Coupling Handbook

Thomas Flexible Coupling Co.—Advantages offered by Thomas flexible couplings under load and misalignment are clearly explained in Engineering Catalog 60. Tables and charts aid in design and application of the right type and size of coupling for practically any service condition. Sizes range from servo couplings for speeds to 50,000 rpm to huge couplings for marine drives.

▲ For more details circle NED-909 C on enclosed inquiry slip ▲

Optics for Industry

Edmund Scientific Co.—128-page Catalog 599 is crammed with data on hundreds of products involving optics which are used for production, research, development, testing, inspection, and maintenance. Described are such items as microscopes, optical gages, telescopes, magnifiers, lenses, prisms, spectroscopes, reticles, mirrors, and photographic items. Prices are given for all items.

▲ For more details circle NED-910 C on enclosed inquiry slip ▲

Plastic Ventilation Products

Heil Process Equipment Corp.—Rigid vinyl and reinforced plastic fume-collecting hoods, ducts, stacks, elbows, and fittings for chemical and corrosive service are detailed in 20-page Bulletin B-500. How to lay out a corrosion resistant system for handling fumes with standard parts is explained.

▲ For more details circle NED-911 C on enclosed inquiry slip ▲

Thermoforming Techniques

Comet Industries—Vacuum into a cavity, drape, plug assist, blow-up vacuum reverse, blow-up vacuum reverse into a cavity, and male assist pressure forming are plastic thermoforming techniques that are described in detail in 24-page bulletin. Drawings aid in explaining methods.

▲ For more details circle NED-912 C on enclosed inquiry slip ▲

Properties of Plastics

Cadillac Plastic & Chemical Co.—Significant physical, electrical, chemical, and optical properties of nine thermoplastic materials are listed in "Table of Properties." Data are given on acrylic, acetate, butyrate, Teflon, Kel-F, nylon, polyethylene, and vinyl types. Back of chart is conversion table from square inches to square feet.

▲ For more details circle NED-913 C on enclosed inquiry slip ▲

Electric Control & Distribution Equipment

Federal Pacific Electric Co.—155-page Redi-Reference catalog describes over 2500 pieces of electrical control, distribution, and power equipment. Photos, specification tables, prices, and wiring diagrams are included for 30 types of products, including circuit breaker load centers, panelboards, wireways, bus duct, magnetic contactors and starters, automatic transfer panels, control centers, assembled switchgear, protective relays, and power circuit breakers.

▲ For more details circle NED-914 C on enclosed inquiry slip ▲

Property Control System

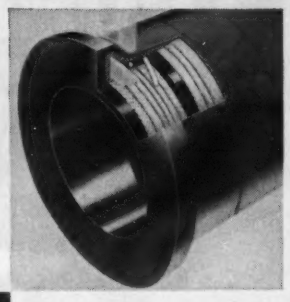
Metalcraft, Inc.—Five-step plan for organizing a property control system is described in "How To Plan a Profitable Property Control Program," a 16-page booklet. Eight benefits resulting from such a program are outlined. Tags bearing company identification and serial number are affixed to all furniture, fixtures, and equipment.

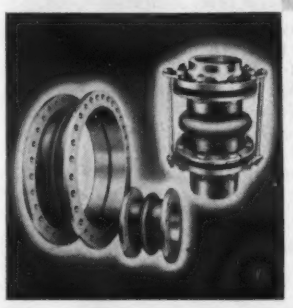
▲ For more details circle NED-915 C on enclosed inquiry slip ▲

Eliminate PIPELINE CORROSION, ABRASION, NOISE, VIBRATION, EXPANSION

CONDOR FLEXIBLE RUBBER PIPE
- Flexible, Strong, Light Weight
- For Working Pressures up to 250 psi
- Lasts 3 to 10 times longer than Iron or Steel!
- Easy to Install
- Available with quick coupling, safe Hydro-Lock Flange

Write for Bulletin 7152





R/M RUBBER EXPANSION JOINTS
- Overcome Expansion Stress
- Avoid Misalignment
- Maximum Resistance to Shock
- Require No Gaskets

Write for Bulletin M685

RM1038

Engineered Rubber Products . . More Use per Dollar
RAYBESTOS-MANHATTAN, INC.
MANHATTAN RUBBER DIVISION, PASSAIC, NEW JERSEY

▲ For more details circle NED-916 C on enclosed inquiry slip ▲

PARTS FEEDING BY AUTOMATION
...feeds dollars into your profit column

In costing today's high speed production it makes sense if you increase production without adding direct labor, the dollars show up in profit . . . fast!

Since AD equipment is self liquidating with labor savings it also adds dollars in earnings all along the line.

Let any one of AUTOMATION DEVICE'S sales engineers, located throughout the country, help you streamline your production facilities and you'll add dollars to your profit.

Send for informative literature and the name of nearest AD representative.

✱ 60

PEECO & VFC DIVISIONS
. . . TWO GREAT NAMES IN PARTS FEEDING

AUTOMATION DEVICES INC.
ERIE, PENNSYLVANIA

▲ For more details circle NED-917 C on enclosed inquiry slip ▲

Dilts LIGHTWEIGHT EXPANDING CHUCK

Cuts Roll Shaft-up Time by 50%

REDUCES CORE DAMAGE

HOLDS WITHOUT SLIPPING

Easy to Handle • Simple to Operate • Prevents Damage

. . . chuck holds roll concentrically—grips core on inside and transmits full braking torque without slippage

Standard Sizes—3"—3½" and 4" core I.D. to fit 1⅛" thru 2³⁄₁₆" round shafts and 1¼" square shafts. (High Tensile Aluminum)

5"—6" core I.D. to fit 2³⁄₁₆" thru 3¹⁵⁄₁₆" round shafts. (Malleable Iron)

Write for specification sheet 102A or place order direct.

THE BLACK-CLAWSON COMPANY
DILTS DIVISION • FULTON, N. Y.

For more details circle NED-918 C on enclosed inquiry slip

put your DEPENDABLE PRODUCTS IN DEPENDABLE

Ellisco REG. U. S. PAT. OFF. **CANS**

Quality ELLISCO containers boost your product's sellability, support and enhance your reputation. ELLISCO experience and specialization in industrial cans will save you money . . . and we offer an extremely wide range of styles and sizes to meet your requirements.

AND MANY OTHERS

Write, wire or phone for a free copy of Product Memo #112 and let us quote on your requirements.

GEORGE D. ELLIS & SONS, INC.
AMERICAN & LUZERNE STREETS, DEPT. P7, PHILA. 40, PA.
BAldwin 3-3405

For more details circle NED-919 C on enclosed inquiry slip

get Big Press Features on *Junior Line*

PRESS-RITE
O.B.I. PRESSES
2 Ton - 5 Ton - 10 Ton

Rugged Cast Frames of special high-tensile semi-steel permit extra large die space. Hand scraped throughout for extreme accuracy with oversize main, connecting rod and ram way bearings to provide maximum rigidity that prolongs die life. Steel bolster plates standard on all PRESS-RITE Presses.

2 TON and 5 TON models have standard clutch and single stroke attachment. Brake standard on 5 TON, optional at extra cost on 2 TON. Knock-out bar in ram on 5 TON model.

10 TON model has roller bearings in flywheel, specially designed PRESS-RITE sliding key clutch with 4 point engagement and replaceable hardened inserts, automatic brake, single stroke mechanism and knock-out bar in ram.

FEATURES include easy adjusting ball screw and locking clamp for fast setting and changing dies, longer stroke, greater shut height and others.

PRESS-RITE DIVISION
Sales Service Mfg. Co.
2365 University Ave., St. Paul 14A, Minn.

Ask your PRESS-RITE Distributor for complete details or write for Bulletin 958.

For more details circle NED-920 C on enclosed inquiry slip

New Processes & Materials

STATIC ELIMINATOR
spray-on type prevents buildup

Static electricity buildup on industrial machinery, meters, plastic materials, photographic dryers and developers, textile materials, and paper stock is prevented by Statikil static eliminator. It also serves as a spark retardent in hazardous operations. By neutralizing static electricity, it prevents static shocks. Product also keeps dust off acetates and records. Statikil dries instantly and invisibly and may be applied by swabbing, wiping, or spraying with hand pump or power spray. It is available in pressurized 12-oz cans at $3 or in bulk at $15 per gallon. • **Statikil, Inc.**, 1220 W. Sixth St., Cleveland 13, Ohio.

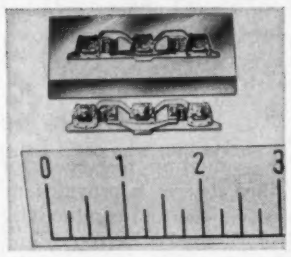
For more details circle NED-921 C on enclosed inquiry slip

MASONRY WATER REPELLENT
resists freeze-thaw cycle damage

An improved silicone type masonry water repellent, Hydrocide S-X Colorless Hycon is especially resistant to destructive freeze-thaw cycles. Tests conducted on the premise that water absorption increases upon continued exposure to freeze-thaw cycles show that level of water absorption in masonry protected by Hycon did not change. • **Sonneborn Chemical & Refining Corp.**, Building Products Div., 404 Park Ave. S., New York 16, N. Y.

For more details circle NED-922 C on enclosed inquiry slip

DIE TESTING MATERIAL
for closed or open dies



Fine grain structure of Copy-Cast two-component die testing material makes possible perfect duplication of fine details. It is used for testing closed or open dies of any kind. Hardening time is controllable from minutes to several hours. Nonshrinking material can be modeled or sculptured with simple woodworking tools, and its metallic finish is easily finished and painted. • **Future Chemicals**, 3008 W. Montrose Ave., Chicago 18, Ill.

For more details circle NED-923 C on enclosed inquiry slip

HIGH STRENGTH STEEL
has up to 235,000 psi yield strength

Yield strength levels from 225,000 to 235,000 psi are exhibited by Unimach UCX2 ultrahigh strength steel developed for missile rocket motor cases. It is a modification of AISI 4100 Series steel through addition of cobalt as an alloying element. When properly tempered, alloy shows essentially no susceptibility to notch sensitivity. It has excellent forming characteristics and good weldability, and can thus be considered for many structural uses. Alloy may be obtained as an air-melted material, or as a Duomelt product, the latter being a designation for consumable electrode vacuum melted materials. • **Universal-Cyclops Steel Corp.**, Bridgeville, Pa.

For more details circle NED-924 C on enclosed inquiry slip

EPOXY RESIN PASTE
two-part material is easily mixed

Rapid curing, dimensional stability, and adhesiveness are characteristics of Ren Shape, an epoxy resin based paste material. The two-part resin-hardener product is applied with brush, spatula, or other tool. Curing takes up to 30 min. Shrinkage is only 0.003 in. per foot. When sealed with a surface coat, material will not absorb moisture. It clings to vertical, horizontal, and circular surfaces despite high temperatures or other adverse conditions. Uses include pattern making, repairing pipes, filling holes, patching, and smoothing areas before painting. • **Ren Plastics, Inc.**, 5422 S. Cedar Rd., Lansing 9, Mich.

For more details circle NED-925 C on enclosed inquiry slip

Stack-n-Nest® TOTE PANS

- Carry bigger payloads . . . tested to 3000 lbs. safe static load.
- Work efficiently . . . here are 373 pans nested in 13 sq. ft. of space, with room to spare.
- Stack high with perfect safety.
- Need no maintenance. These smooth, one-piece Fiberglass pans won't rust, dent, or burr out . . . unaffected by oil, water, and most chemicals.
- Stack and nest within their own dimensions without gadgets.
- In stock at Lewis . . . all sizes ready to ship to your order within 24 hours.

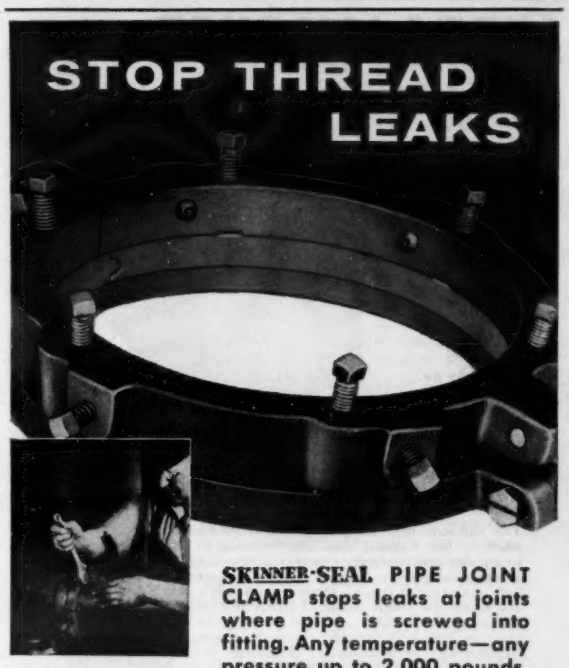
Patented 2,823,828 2,823,829

Widest range of sizes and colors . . . write for complete details TODAY!

G. B. Lewis COMPANY
403 MONTGOMERY STREET • WATERTOWN, WISCONSIN

For more details circle NED-926 C on enclosed inquiry slip

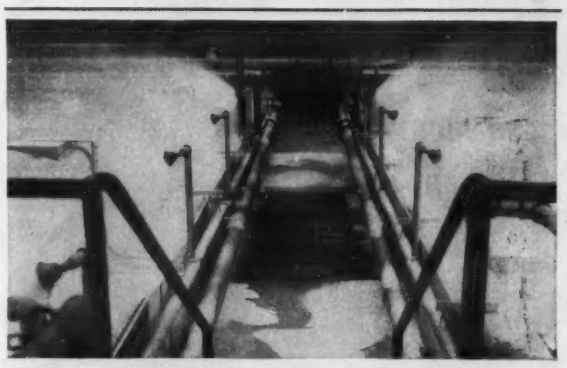
STOP THREAD LEAKS



SKINNER-SEAL PIPE JOINT CLAMP stops leaks at joints where pipe is screwed into fitting. Any temperature—any pressure up to 2,000 pounds. Saves the cost of tearing out and renewing leaky fittings. Prevents shutdowns. Has served industry 60 years. Stocked by most distributors.

M. B. SKINNER CO., South Bend 21, Ind.—Established 1898

For more details circle NED-927 C on enclosed inquiry slip



High protection against low flash-point fires!

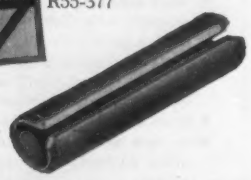
This Rockwood FogFOAM system guards the oil separator pits in the Cincinnati Gas & Electric Company's plant. During any critical temperature rise, detectors in the system sense the inception of fires. Rockwood FOAM liquid, mixed with water and air, is then instantly released through many FogFOAM heads, completely covering the threatened area with a thick blanket of FOAM — *and averting a dangerous fire.* For details on Rockwood fire-fighting products and systems write to ROCKWOOD SPRINKLER COMPANY, 569 Harlow St., Worcester 5, Mass.

ROCKWOOD SPRINKLER COMPANY
A Division of The Gamewell Company
Engineers Water . . . to Cut Fire Losses

For more details circle NED-928 C on enclosed inquiry slip

New ROLLPIN APPLICATION DATA!

Esna's latest Rollpin booklet gives you valuable information on where to use and how to install these versatile, all-purpose fasteners. A slotted, chamfered, cylindrical spring pin, Rollpin locks securely in place—yet can be drifted out and used over and over again. Write for it today and see how Rollpins can simplify design and production operations. Address Dept. R55-377



ROLLPIN®

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

▲ For more details circle NED-930 C on enclosed inquiry slip ▲

VIBRA-WASHER

...THE COMPLETELY NEW AUTOMATIC PARTS WASHER AND METAL CONDITIONING MACHINE

- Labor saving
- Automatic unloading
- For single or multi-stage operations
- No nesting of parts during cleaning or conditioning cycle
- Adjustable capacities to 10,000 lbs. per hour

The versatile new Simplicity VIBRA-WASHER, revolutionary machine for washing and conditioning of small metal parts, stampings and castings, employs a vibrating work carrier that automatically conveys parts through cleaning or conditioning bath. Solution is forced around parts, even into blind drillings and slots. In single stage, VIBRA-WASHER removes chips, oil and grease quickly . . . economically. In multi-stage, several units in line will provide cleaning, rinsing and phosphating, eliminating "between-stage" handling. Write today for Bulletin 107, to: Industrial Washer Division.

Simplicity TRADE MARK REGISTERED
212 ENGINEERING COMPANY • DURAND 15, MICH.

▲ For more details circle NED-931 C on enclosed inquiry slip ▲

the most efficient way to solve tool and die steel problems...

...is this newly revised Matched Tool and Die Steel Manual. 188 pages, filled with cost-saving methods that will help you cut production costs and boost output.

- To get tools that provide the properties you need on each job . . .
- To see your new tool ideas become reality with the aid of the ingenious **Tool Steel Selector** . . .
- To guide you to a more efficient production of tools . . .

SEND FOR YOUR COPY TODAY

The Carpenter Steel Company
118 W. Bern Street Reading, Pa.

▲ For more details circle NED-932 C on enclosed inquiry slip ▲

New Literature & Catalogs

Gear Heads, Reducers & Couplings

Sterling Precision Corp., Instrument Div.—Gear heads, speed reducers, differentials, precision gears, couplings, shafting, and electronic hardware are among 20,000 servo and breadboard items listed in 512-page Catalog 61. Prices are included for these stocked, ready-to-deliver items.

▲ For more details circle NED-933 C on enclosed inquiry slip ▲

Hydraulic Pumps & Fluid Motors

American Brake Shoe Co., Denison Engineering Div.—72-page Bulletin 220 gives design details and operating characteristics of line of hydraulic pumps, fluid motors, and valves rated for hydraulic power up to 5000 psi. Axial piston and vane type hydraulic pumps and fluid motors, check and control valves, electro-hydraulic pressure control valves, pilot operated control valves, surge damping valves, and flow controls are covered with typical performance data.

▲ For more details circle NED-934 C on enclosed inquiry slip ▲

Electric Furnace Brazing

General Electric Co.—Re-release of 50-page Bulletin GEA-3139C provides how and where-to-use information relative to electric furnace brazing. It covers the where and why of furnace brazing, how to remove copper from steel after brazing, selection of brazing metal and flux, strength of brazed part, how to furnace-braze cast iron, and remedies for furnace-brazing ailments.

▲ For more details circle NED-935 C on enclosed inquiry slip ▲

Gear Case Accessories

Technical Development Co.—Revised 24-page Catalog 3-60 on Tedeco aviation grade gear case accessories features full scale, dimensioned drawings of every size to facilitate tracing by designers. Specifications cover self-closing magnetic drain plugs, magnetic and electric chip detectors, drain hose assemblies, breather vents, liquid level sight plugs, observation windows, and filler plugs and caps.

▲ For more details circle NED-936 C on enclosed inquiry slip ▲

Thermistors & Varistors

Sufficient information for evaluating the need for thermistors, varistors, and allied devices is provided by revised data book. It also covers thermal conductivity cells, electronic controls, and thermal, electronic, and physical-sensing devices. Thermistors are thermally sensitive variable resistors used for temperature measurement, control, or compensation. Send $1 to Victory Engineering Corp., 540 Springfield Rd., Union, N. J.

▲ For more details circle NED-937 C on enclosed inquiry slip ▲

Toggle Switches & Assemblies

Minneapolis-Honeywell Regulator Co., Micro Switch Div.—High performance toggle switches and assemblies listed in 32-page Catalog 73d are used in airborne, mobile, marine, electronic, and commercial applications. Wide selection of military versions is covered, as well as pull-to-unlock, hermetically sealed, electrical memory, rocker-actuated, and miniaturized designs.

▲ For more details circle NED-938 C on enclosed inquiry slip ▲

Washing & Phosphatizing Equipment

Ramco Equipment Corp.—Washing and phosphatizing equipment described in 8-page Bulletin 659-1 includes flexible, standardized, conveyorized, stage-by-stage units designed to meet long range requirements for a complete multistage machine. Equipment is available in five standardized work silhouettes, with six process cycle time models in each group.

▲ For more details circle NED-939 C on enclosed inquiry slip ▲

Mercury Switch Controls

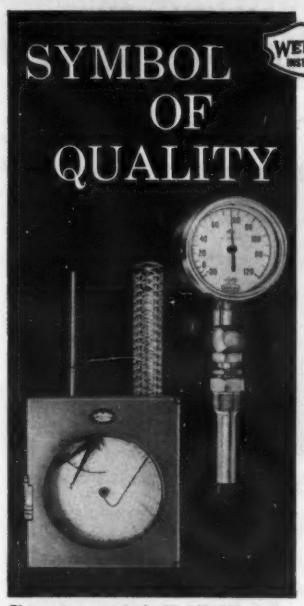
Mercoid Corp.—Listed in 56-page Catalog 860 are mercury switch equipped controls for single and two-stage pressure, differential pressure, single and two-stage temperature, liquid level, and mechanical movement. Controls are designed for indoor, outdoor, or hazardous location. Also shown are transformer-relays and a line of hermetically sealed mercury switches.

▲ For more details circle NED-940 C on enclosed inquiry slip ▲

Processing Equipment

Fuller Co.—Equipment for the process industries discussed in 12-page Bulletin G-3C is used for pneumatic conveying of dry granular and pulverized materials, plant air supply and vacuum service, cement processing, and handling of combustion products. Operating principles of equipment are explained.

▲ For more details circle NED-941 C on enclosed inquiry slip ▲



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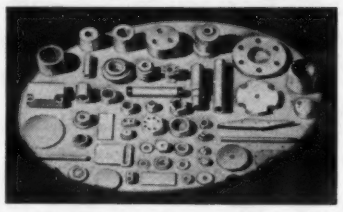

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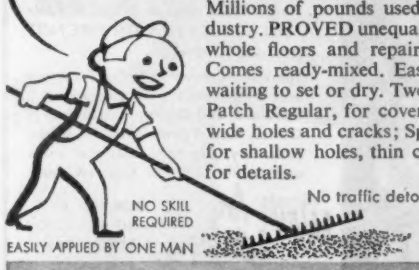

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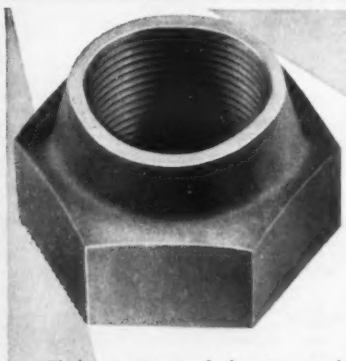

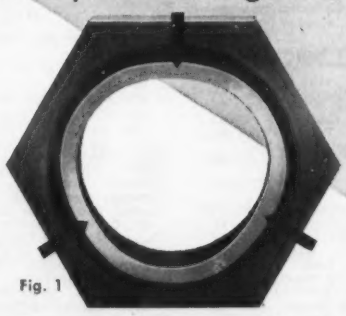

Fig. 1

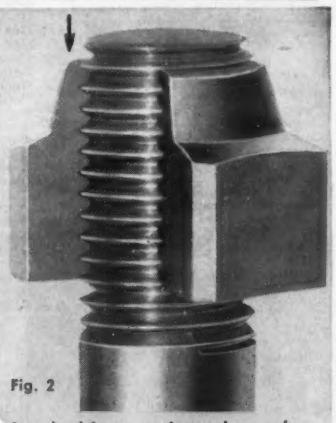

Fig. 2

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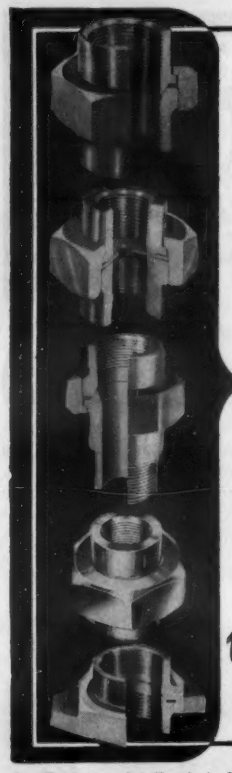

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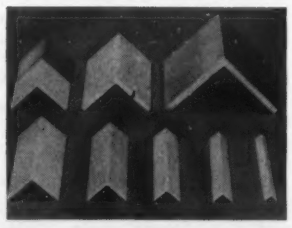

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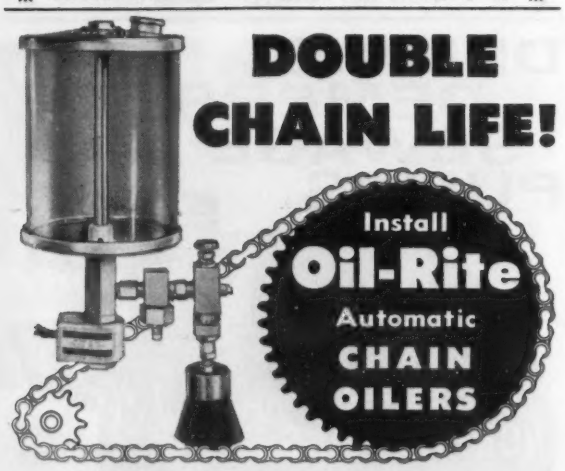

Here's the *low-cost answer to chain breakdowns* caused by link-wear, stretch, corrosion and friction. OIL-RITE Chain Oilers feed oil by gravity through solenoid and sight feed valve to brush which rides the chain. Solenoid *starts and stops with driving motor,* making operation automatic, oiling only when chain moves. Drop feeding adjustable. 9 oz. — 1 gal. in capacity with brushes to suit your chains.

GIVE YOUR PLANT ALL THESE BENEFITS!

- Safe, sure chain lubrication
- Reduce chain wear
- Eliminate costly hand oiling
- Cleaner, less hazardous floors

Many styles of Electro and Manual Chain Oilers available. Write for Free Bulletin.

Oil-Rite CORPORATION

2364 WALDO BOULEVARD

MANITOWOC, WISCONSIN

Oil Cups • Dispensers • Oiling Systems • Valves • Oil Gages • Chain Oilers

▲ For more details circle NED-962 C on enclosed inquiry slip ▲

New Literature & Catalogs

Free-Flowing Materials Listing

Sprout, Waldron & Co.—Designed to serve as a guide to processing and conveying chemical, food, plastic, and allied products, "A to Z Adaptioneering Dictionary" covers a wide variety of free-flowing dry materials and slurries. It provides an alphabetical glance at size reduction, size classification, materials handling, mixing, blending, pelleting, and densifying. Book is to be updated each year.

▲ For more details circle NED-963 C on enclosed inquiry slip ▲

Power Systems for Electronics

Electric Specialty Co.—"Precise-Power Systems for the Electronics Industry" is title of 32-page Engineering Bulletin 59-P which presents applications, engineering data, subsystems and system-component characteristics, and recommended standard system combinations. Individual bulletins cover motor-alternators for ac-dc conversion, motor-generators for ac-dc conversion, field-current regulators, sensing elements, signal and power amplifiers, and control systems.

▲ For more details circle NED-964 C on enclosed inquiry slip ▲

Variable Speed Pulleys

Lovejoy Flexible Coupling Co.—Variable speed pulleys plus related compound drives, motor bases and frames, wide V-belts, and sheaves are subject of 24-page technical catalog. The cam-operated pulleys maintain desired speed, even under overload conditions, and range from fractional to 5 hp with speed ratios from 1.75:1 to 2.6:1. Bulletin also covers three types of cast iron wide V-belt sheaves.

▲ For more details circle NED-965 C on enclosed inquiry slip ▲

Steel Equipment

Lyon Metal Products, Inc.—92-page general catalog 100-H illustrates the Lyon line of steel equipment products for business, industry, and institutional use. New products shown for the first time are an office machine cabinet, office machine table, typewriter attachment for Lyon desks, drawing table, two woodworking benches, bookcases, and a drawer tool stand.

▲ For more details circle NED-966 C on enclosed inquiry slip ▲

Conveyor Chain Manual

Moline Malleable Iron Co.—Compiled as an engineering reference book, conveyor chain manual outlines correct application of chains to conveyor systems, development of attachments, and factors to consider in selecting. Comparison charts, installation tips, maintenance pointers, and trouble shooting chart are among book's features.

▲ For more details circle NED-967 C on enclosed inquiry slip ▲

Masonry Saws

Wheel Trueing Tool Co., Truco Masonry Drilling Div.—Information folder and price list covers Truco masonry and concrete saws and blades. Stationary saw models, as well as a self-propelled concrete saw are shown. Latter will travel at up to 36 ipm.

▲ For more details circle NED-968 C on enclosed inquiry slip ▲

Timing Belt Drives

R. & J. Dick Co.—Details on selection, design, installation, operation, and maintenance of timing belt drives are presented in 56-page Catalog DTE-1. Typical uses described range from electric typewriters to high torque applications in driving heavy industrial equipment. Drives assure positive power transmission by tooth grip of belting on the matching sprocket.

▲ For more details circle NED-969 C on enclosed inquiry slip ▲

Hose, Fittings & Couplings

Aeroquip Corp.—Up-to-date specifications concerning Aeroquip hose, fittings, self-sealing couplings, and related products for use with plant machinery, mobile equipment, oil field machinery, and powerplants are included in 36-page Catalog 204. Highlights include a hose selector chart listing various applications and fluids for which specific hoses are recommended.

▲ For more details circle NED-970 C on enclosed inquiry slip ▲

Fire Fighting Equipment

Fyr-Fyter Co.—28-page Catalog S-62 contains latest facts on Globe automatic sprinkler systems, high and low pressure CO_2 systems, smoke detection systems, dry chemical and foam systems, fire hose and extinguisher cabinets, hose racks and reels, Siamese connections, portable extinguishers, and accessory products essential to a complete interior fire control system.

▲ For more details circle NED-971 C on enclosed inquiry slip ▲

CIRCUIT-MASTER

missing parts detector

detects: non-ejection • mis-feed • buckling • end-of-material

Priced as low as $271.75 complete!

Protect all your dies from damaging overloads for less than the replacement cost of one. Circuit-Master's patented electronic circuits automatically stop your machines BEFORE an unejected part can cause a die-damaging overload. Simple to install, no changes to equipment or wiring required—Circuit-Master is completely automatic, no adjustments of any kind.

Write, wire, phone now for detailed bulletin Ned-360.

WINTRISS, INC.

Originators and Manufacturers of Circuit-Master Overload Detector, Autotransfer, Automat, Automold and Missing Parts Detector.

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Representatives: A few territories open on an exclusive, protected basis.

▲ For more details circle NED-972 C on enclosed inquiry slip ▲

Engineered and Standardized to deliver Outstanding Performance

GENERAL PURPOSE BELT CONVEYERS

• Mathews General Purpose Belt Conveyers are furnished in a wide range of belt widths and section lengths. They can be assembled easily, for all parts are standardized and furnished from stock. The conveyers have several features which make them especially practical for the average package handling problem. The drive unit may be located at the end, or at any convenient point beneath the conveyer. End roller assemblies, takeups, and three-pulley devices are all standardized and easily installed.

Write for Bulletin G. P. 53 and Catalog 856 today.

GENERAL OFFICES ..... MATHEWS CONVEYER COMPANY, Ellwood City, Pennsylvania

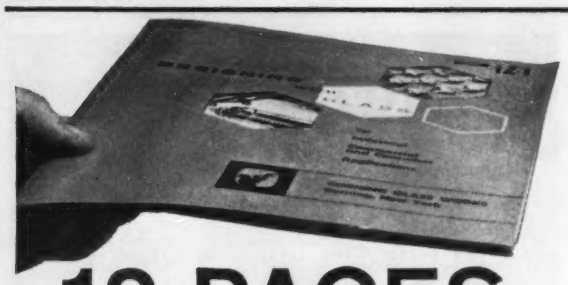
WESTERN DIVISION ..... MATHEWS CONVEYER COMPANY WEST COAST, San Carlos, California

CANADIAN DIVISION ..... MATHEWS CONVEYER COMPANY, LTD., Port Hope, Ontario, Canada

Over Fifty Years of Leadership in Mechanized Handling

MATHEWS

▲ For more details circle NED-973 C on enclosed inquiry slip ▲



12 PAGES

on how glass might make your product look better or work better or both

Many have found they could put the unique sets of properties of glass to work improving the appearance and the performance of their products.

They got to this point through the sort of information contained in IZ-1, a bulletin newly revised to give you the latest information on how to design with glass.

It gives many applications already made, details the characteristics of the many different Corning glasses available, discusses design parameters and limitations, and gives some new data on new materials such as PYROCERAM® glass-ceramics, and some interesting porous glasses.

If you work on design or performance, you should have a copy of this bulletin. For a copy, write to 56 Crystal St., Corning, N. Y.

CORNING GLASS WORKS

CORNING MEANS RESEARCH IN GLASS

▲ For more details circle NED-974 C on enclosed inquiry slip ▲

Cuts Bending Costs

AS MUCH AS **50%**

• NEW PINES 3T PRESS •

Makes Bends Progressively To Varied Angles In Multiple Planes

Quality bends at production speeds that are 2 to 3 times faster than conventional methods, are now possible with the new Pines 3-T Bending Press. Many tubular parts in sizes ranging up to 1" O.D. are now formed at net speeds in excess of 1000 bends per hour. Up to 9 different bend angles can be produced in a single setup. Adjustable automatic indexing stops accurately control depth of ram stroke. Open tooling area permits rapid progressive bending in varied planes. High production speed is just part of the story. Unusually smooth, good looking bends are also produced to meet the quality demands of automotive, furniture, toy, office equipment, and appliance manufacturers. Wing dies are designed to move in ways as a bend is made, and their pivoting action is hydraulically cushioned through bearing-mounted rocker arms. This principle eliminates scratches or draw marks and produces wrinkle-free bends with very little distortion.

PINES ENGINEERING CO., INC. Specialists in Tube Fabricating Machinery 637 WALNUT • AURORA, ILLINOIS

FREE DATA SHEETS Get the complete cost cutting story on this Press today. Larger models for tubes to 2" O.D. available.

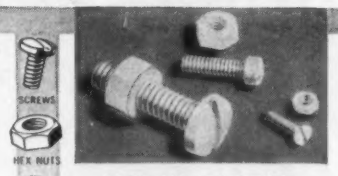
PRODUCTION BENDING • DEBURRING • CHAMFERING MACHINERY

▲ For more details circle NED-975 C on enclosed inquiry slip ▲

NEW NYLON & THERMO-PLASTIC parts from GRC

Economically mass produced on fully automatic patented machines, GRC nylon parts are available from stock in many sizes and types. GRC uses single cavity techniques, molds in one automatic cycle, gets accurate, uniform parts, ready for immediate use. These advantages, these economies, apply too, to tiny made-to-order parts to your specifications. . . in quantities of 25,000 to many millions. Write for bulletin describing GRC's unique method for injection molding small plastic parts or send prints for quotations. Ask about our zinc alloy die castings too!

See us at the IRE—Booth #4110



NYLON SCREWS AND NUTS

GRC's complete line of high quality, close tolerance molded nylon screws and hex nuts include screws in standard commercial heads—Phillips or slotted types—in sizes from #4 thru 1/4"; hex nuts in ten sizes (#2 thru 5/16") GRC molded nylon miniature machine screws—half the weight of aluminum—in sizes from #2 thru 1/4" make more compact designs possible. GRC's single cavity molding technique adds exceptional uniformity, accuracy, economy to nylon's high strength-to-weight ratio, built-in electrical insulating qualities, stability, resilience and elasticity. GRC's molded nylon fasteners are available from stock in a wide range of types, sizes and lengths.

NO SIZE TOO SMALL

Maximum: 1 1/4" long — .03 oz.

Write for samples, prices, and GRC's New Detailed Industrial Fastener Catalog.

GRIES

GRIES REPRODUCER CORP.

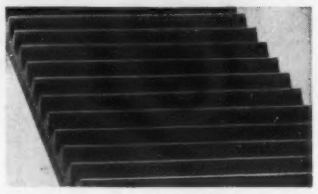
World's Foremost Producer of Small Die Castings

143 Beechwood Ave., New Rochelle, N. Y. • NEw Rochelle 3-8600

▲ For more details circle NED-976 C on enclosed inquiry slip ▲

New Processes & Materials

INCLINE CONVEYOR BELT
ridges keep packages from slipping



Especially recommended for carrying smooth, rough, or slippery packages or objects up inclines as steep as 45 degrees, Duralift incline conveyor belt has a top cover of wear resistant Dulon with parallel, transverse, inverted-V ridges. The cover withstands abrasion, gouging, tearing, and oxidation. The deep-V ridges are self-cleaning. Balanced construction equalizes ply stress for long life. Belt is available in 3 or 4-ply 28-oz duck in 48-in. wide 500-ft long rolls, and can be cut to any width. Special constructions include molded edges, bottom cover, and other fabrics to order. • **Boston Woven Hose & Rubber Co.**, Box 1071, Boston 3, Mass.

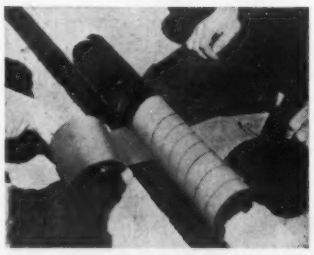
▲ For more details circle NED-977 C on enclosed inquiry slip ▲

RADIATION SHIELDS
made of polyethylene resin

Protection from neutron bombardment is provided by these polyethylene radiation shields, so thick that they must be cut on special saws. Lighter in weight than concrete and lead, the panels of Petrothene 100 resin contain hydrogen nuclei which reduce the energy in the high energy neutrons created by atomic fission. Small quantity of boron compounded with the polyethylene absorbs the remaining low energy neutrons. Material passes all military specifications for radiation shielding and is extruded with high surface smoothness and gloss, plus uniform thickness, in sheets from 1/8 to over 1 in. Widths over 36 in. may be cut to any specified length. • **St. Regis Paper Co.**, Panelyte Div., Richmond, Ind.

▲ For more details circle NED-978 C on enclosed inquiry slip ▲

PIPE JOINT TAPE
for plastic coated steel pipe



Opaque yellow colored X-Tru-Tape protects the exposed ends of X-Tru-Coat plastic coated steel pipe, supplied from the mill with exposed ends to allow welding. Like the yellow plastic coat of the pipe, the tape resists moisture, acids, alkalies, salt, stray currents, and corrosive environments. The tape has a dielectric strength of 15,000 v and is offered in 1, 2, and 4-in. widths in 100-ft rolls. It consists of a 10-mil polyethylene backing and 4-mil layer of synthetic adhesive. • **Republic Steel Co.**, 1441 Republic Bldg., Cleveland 1, Ohio.

▲ For more details circle NED-979 C on enclosed inquiry slip ▲

POLYPROPYLENE FILM
for packaging and thermoforming

Clarity, high tensile strength, high moisture and temperature resistance, and insensitivity to atmospheric variations are characteristics of abrasion resistant Olefane polypropylene film. Thicknesses from 1 to 4 mils for packaging and from 4 to 20 mils for thermoforming are available in 2 1/2 to 60-in. wide rolls. Film can be treated for printing, or supplied untreated, and is offered with low or high slip coefficient of friction properties. Product will not crack under stress. • **AviSun Corp.**, 1608 Walnut St., Philadelphia 3, Pa.

▲ For more details circle NED-980 C on enclosed inquiry slip ▲

LOW COST INCINERATOR

BURNS TRASH SAFELY OUTDOORS

Only $110.00 COMPLETE

NO INSTALLATION COST

Burn wrappings, sweepings, papers, cartons, packing, rags, food waste, safely outdoors. Scientific draft control ends fire hazards of flying ash, sparks, burning blowing papers. Burns damp, green, or dry refuse to fine ash in any weather. Minimizes smoke and smell, needs no watching. Safe for use 10' from buildings. Stands 52" high x 35" square at base. 10 bushel burning capacity. Complete with hinged hood, ash pan base and grate and cleanout door. Made of aluminized steel (molten aluminum bonded to steel) with replaceable inner steel panel construction for long life. Shipped assembled—weight 170 lbs. Only $110.00 F.O.B. Cleveland. Satisfaction guaranteed. Other sizes available.

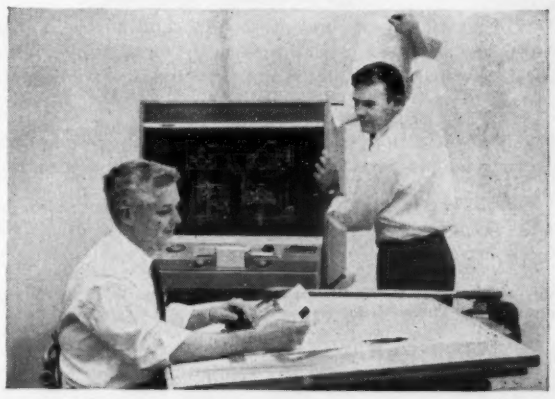
Write for **FREE** *Folder*

ALSTO COMPANY

Dept. 14 4007 Detroit Ave. Cleveland 13, Ohio

▲ For more details circle NED-981 C on enclosed inquiry slip ▲

now... 3M makes microfilm so easy to use



3M's new THERMO-FAX "Filmac 200" Reader-Printer makes microfilm so practical—so easy to use. It combines the advantages of a reader and a printer in a single low-cost unit. You can refer to the enlarged drawing clearly projected on the big screen, make a work-size print in seconds. You can take *more* than a look—you can take a copy.

The THERMO-FAX "Filmac 200" Reader-Printer lets you make copies of what you need when you need them. So low in cost, it puts microfilm in reach of the smallest engineering firm or department.

If you are now using microfilm, you will find that the "Filmac 200" Reader-Printer will fit into your present system perfectly. If you are considering microfilm for engineering drawings, investigate the "Filmac 200" Reader-Printer first. Its low initial cost—plus its fast, simple operation—make microfilm practical and so easy to use. Call your local dealer or mail the coupon for complete information.

Thermo-Fax "FILMAC" READER-PRINTERS 3M

MINNESOTA MINING AND MANUFACTURING COMPANY

. . . WHERE RESEARCH IS THE KEY TO TOMORROW

THE TERM "THERMO-FAX" IS A REGISTERED TRADEMARK OF 3M COMPANY

Minnesota Mining and Manufacturing Company
Dept. FBQ-30, St. Paul 6, Minnesota
Please send me complete facts on the new THERMO-FAX "Filmac 200" Reader-Printer.

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

▲ For more details circle NED-982 C on enclosed inquiry slip ▲

Stearns electro-magnetic miniature CLUTCHES

STYLE "SM"*

Now Available in 6 Standard Sizes

* Stationary Magnet

- Installation-Proved Reliability
- Wide Range of Size . . . from 7/8 in. to 4¼ in. Torque from 25 oz in. to 240 lb in.
- Heavy-Duty Construction
- Moisture-, Corrosion-Resistant
- Fast, Easy Installation
- Stationary Magnet
- Rapid Actuation
- Self-Adjusting
- Available with extended hubs for pulley mounting

For complete data, request Bulletin No. 504-BD

Stearns ELECTRIC CORPORATION 120 NORTH BROADWAY MILWAUKEE 2, WISCONSIN

▲ For more details circle NED-983 C on enclosed inquiry slip ▲

SOLDER WITHOUT CLEANING

SOLDER FAST

SOLDER SAFELY

SOLDER IN A BREEZE

Copper — Brass — Steel

Terne Plate—Galvanizing

WETOIL is powerful enough to solder on dirty metal and mild enough to package in a can.

WETOIL is a new concept in flux; contains alkaline buffer to stabilize without attack; comes alive with torch or iron and the residue is readily soluble in water.

WETOIL will penetrate and wet dirt, oil, grease and extraneous matter. No Skips. High Tensile Strength.

WETOIL is packaged in bulk and gallons. Special offer six 4 oz. cans, with applicator brush in cap, $3.00 fob Philadelphia, Pa. Gallon $3.65.

Have you tried #1 Acid Brushes, 25% more hair, $3.50 per gross, f.o.b. Philadelphia.

FARRELLOY COMPANY
1246 North 26th Street, Philadelphia 21, Pa.

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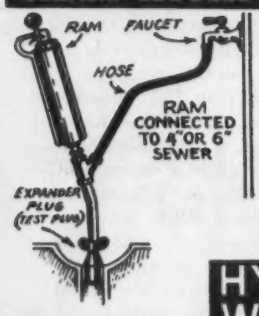
CLEARS CLOGGED DRAINS in Seconds!



The ideal plumbing service tool. Can pay for itself in one application!

Smashes through the most stubborn blockages, then flushes clean — all in one operation!

Comes equipped with self-contained manual compressor (can charge Ram to 100 lbs. in 30 seconds!) and drain adaptors in 6 sizes!

HYDRAULIC WATER RAM

Anyone can operate it! Thousands already in use, have saved *millions* of dollars in industry and institutions. Why lose time, suffer inconvenience, waste dollars needlessly on either completely blocked or slow-moving sewers, drains, fixtures? The HYDRAULIC WATER RAM clears severest stoppages with SPLIT-SECOND HYDROSTATIC IMPACT! . . . Shatters blockage, then flushes clean. No snakes, chemicals, cables. No pushing through. Works perfectly, vent or no vent! Nothing to wear out. You risk nothing on our 30 day free trial offer, at our expense. Write for details.

Works perfectly with all clogged fixtures, toilets, sinks, urinals, etc. Equipped with 4" rubber cone, ideal for toilets, plus set of 5 tapered adaptor plugs for other drains or sewers.

Write for Information, Prices, Free Trial Offer — Today!

HYDRAULIC MANUFACTURING CO.

214 INDUSTRIAL HEIGHTS KIEL, WISCONSIN

▲ For more details circle NED-985 C on enclosed inquiry slip ▲

New Processes & Materials

FLUORESCENT SAFETY KITS contain bright safety color paints

Two do-it-yourself plant test kits of Hi-Viz fluorescent industrial safety paints contain ample samples of these paints. Reportedly four times brighter than conventional safety paints, Hi-Viz colors are usable anywhere for making equipment, signs, or obstacles highly visible to minimize accidents or hazards. Kit S-3 has three self-spray aerosol cans containing white primer, Hi-Viz color, and sealer. Kit S-20 contains these three items plus quarter pints of all eight Hi-Viz fluorescent colors in alkyd enamel, white primer, and protective sealer. Application bulletin, prices, and color swatches are included. • **Lawter Chemicals, Inc.**, 3550 Touhy Ave., Chicago 45, Ill.

▲ For more details circle NED-986 C on enclosed inquiry slip ▲

OIL ABSORBING AGENT soaks up dangerous oil spills

Oils, grease, and chemicals spilled onto floor are effectively picked up by Oil Spunj, a processed mineral clay in granular form. Clay is spread on wood, metal, or concrete floors just 1/8 in. thick to absorb spilled oils or fluids. When saturated, it can be easily swept up. Granules can be re-used with soluble oil. • **Canfield Oil Co.**, 3216 E. 55th St., Cleveland 27, Ohio.

▲ For more details circle NED-987 C on enclosed inquiry slip ▲

SPIRAL RETRACTABLE CABLE combines up to 100 conductors

Spectra-Flex spiral retractable cable is multicolored and can be made with up to 100 conductors in No. 10 to 30 gages. Shielded wires and coaxial cables can be incorporated if desired, provided they have a vinyl jacket. Limit on stretch length is 50 times the closed length. To eliminate twisting strain upon terminations, the extensible, flexible cable is made with a reversal in direction of winding or spiral placed near the center of the cable length. • **Spectra-Strip Wire & Cable Corp.**, Box 415, Garden Grove, Calif.

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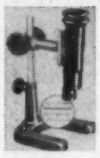
UNUSUAL BARGAINS



ERECT IMAGE LOW POWER MICROSCOPE WITH DIRECT READING SCALE RETICLE

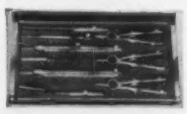
Worth $80 to $100—but use of American-made war surplus optics results in unusual bargain. Reticle has scale .4" long with .005" gradations for 10 power use; and scale .2" long with .0025" gradations for 20 power use. Unlimited applications for direct measuring. Image is erect and correct right to left, optics are color corrected, ample eye relief. Microscope is 5" long, base 4½" x 4½"—can be raised from 8½" to 13".
Stock No. 70,266-AE .....$29.95 Postpaid

Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee

NEW! CIRCULAR SLIDE RULE: Pocket Size—Fast—Easy to Use!

Be a Math Whiz! New Circular Slide Rule multiplies, divides, figures fractions, percentages, squares, cubes, roots, proportions, circumferences, areas, retail prices, fuel consumption. Eliminates the confusions of ordinary slide-rules. Priced far lower. Faster, easier to learn and use. Constructed of 2 aluminum discs with plastic indicator. 3½" diameter. Directions included.
Stock No. 30,336-AE .....$4.95 Postpaid

Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee



CLOSE OUT! MECHANICAL DRAWING SET

Regular Price $18.00, Our Price Only $8.00 Ppd. American manufacturer couldn't compete with foreign imports—thus you get a terrific bargain, even far below import prices. 10 handsome pieces in velvet-lined case. Nickel plated brass — precision American-made. We guarantee you'll be satisfied or money refunded.
Stock No. 50,200-AE .....$8.00 Ppd.

Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee

FREE! Giant CATALOG of OPTICAL BUYS!

OVER 1,000 OPTICAL ITEMS . . . Many on-the-job helps . . . quality control aids! 128 pages — hundreds of illustrations. Many war surplus bargains! Imported instruments! Lenses, Prisms, Magnifiers, Telescopes, Satellite Scopes, Microscopes, Binoculars, etc. Optics for industry, research labs, experimenters, hobbyists, math learning aids. Write for FREE Catalog AE

EDMUND SCIENTIFIC CO., Barrington, N. J.

▲ For more details circle NED-989 C on enclosed inquiry slip ▲

REMOVE MATERIAL up to 60% faster with a B&D Portable Grinder

Take the tool to the work for finish grinding, removing burrs or wire brushing with a B&D 2½", 5" or 6" Portable Grinder. Designed for operator comfort —power-built for long, trouble-free life. Call your distributor for a demonstration or circle the number below for information.

50th YEAR

Leading Distributors Everywhere Sell

See Tools-Electric Yellow Pages for Service & Sales

Black & Decker

Quality Electric Tools

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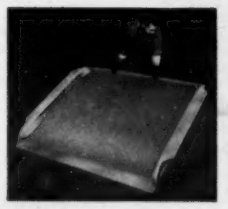
IMPORTANT BOARD MEETING

THE BOARD: *A Magliner Magnesium Dock Board*
THE PROBLEM: *Loading Costs*

Whenever Magliner Dock Boards and dock problems meet head on—the result is faster loading and big cost savings all around! Magliners are magnesium light—*easily handled by one man*—and ruggedly built to keep men, loads and equipment moving safely, economically . . . year after year. Performance-proved on thousands of docks.



WRITE FOR MAGLINER BROCHURE 204
Magline Inc. P. O. Box 53
Pinconning, Michigan

MAGLINER
MAGNESIUM DOCK BOARDS

▲ For more details circle NED-991 C on enclosed inquiry slip ▲

REPAIR FACTORY FLOORS WITH THIS... INSTANT-USE

INSTANT SETTING PATCH!

MAKE TEST ON TRIAL OFFER

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut — tamp smooth — truck over! No waiting! INSTANT-USE bonds tight to old concrete — right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment!

MAIL COUPON for TRIAL OFFER and FREE BROCHURE

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
3603 Filbert St., Philadelphia 1, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and Free INSTANT-USE BROCHURE—no obligation. (Clip and attach Coupon to Co. letterhead.)

Name .....
Title .....
Company .....
Address .....

▲ For more details circle NED-992 C on enclosed inquiry slip ▲